

FIG. 1

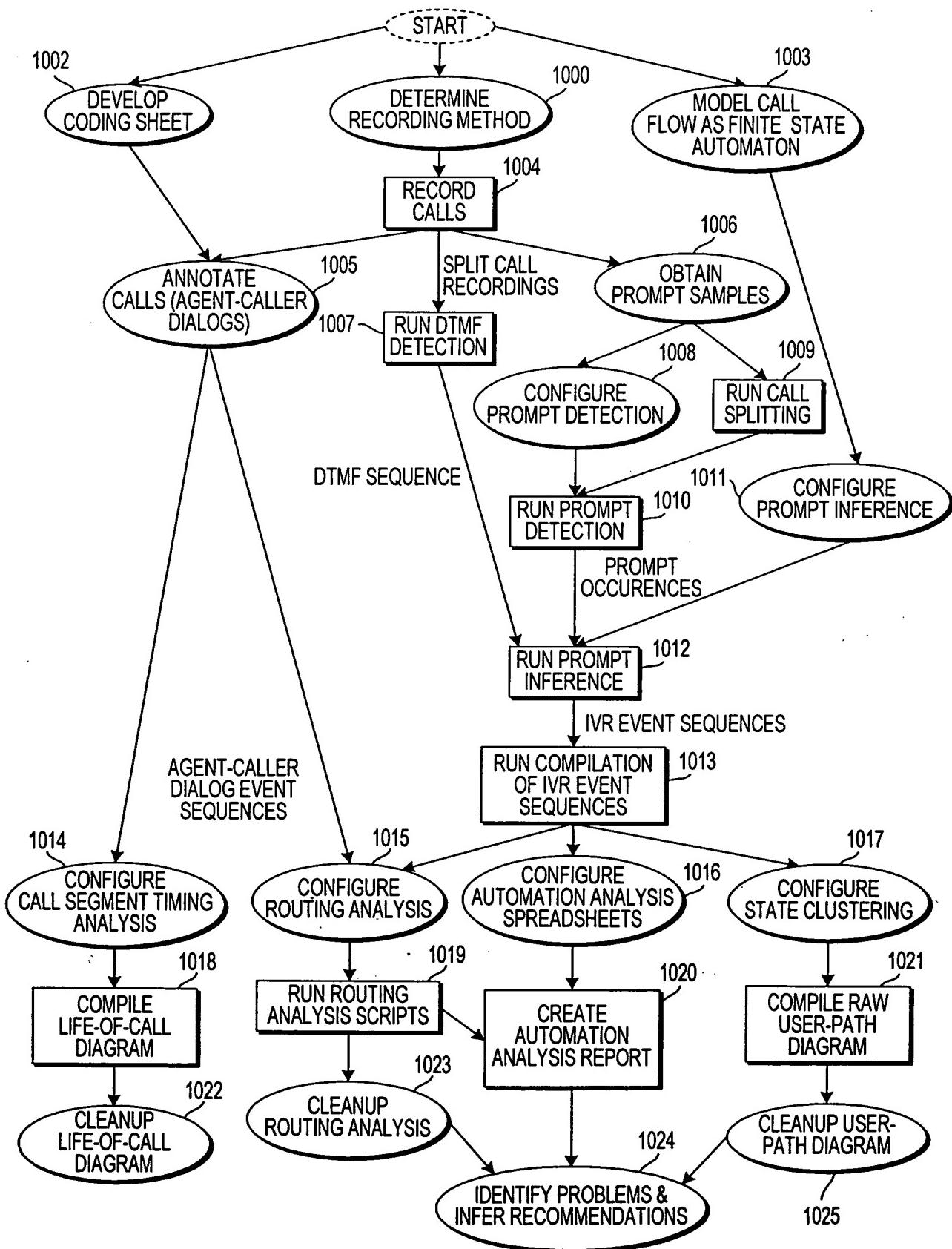


FIG. 1A

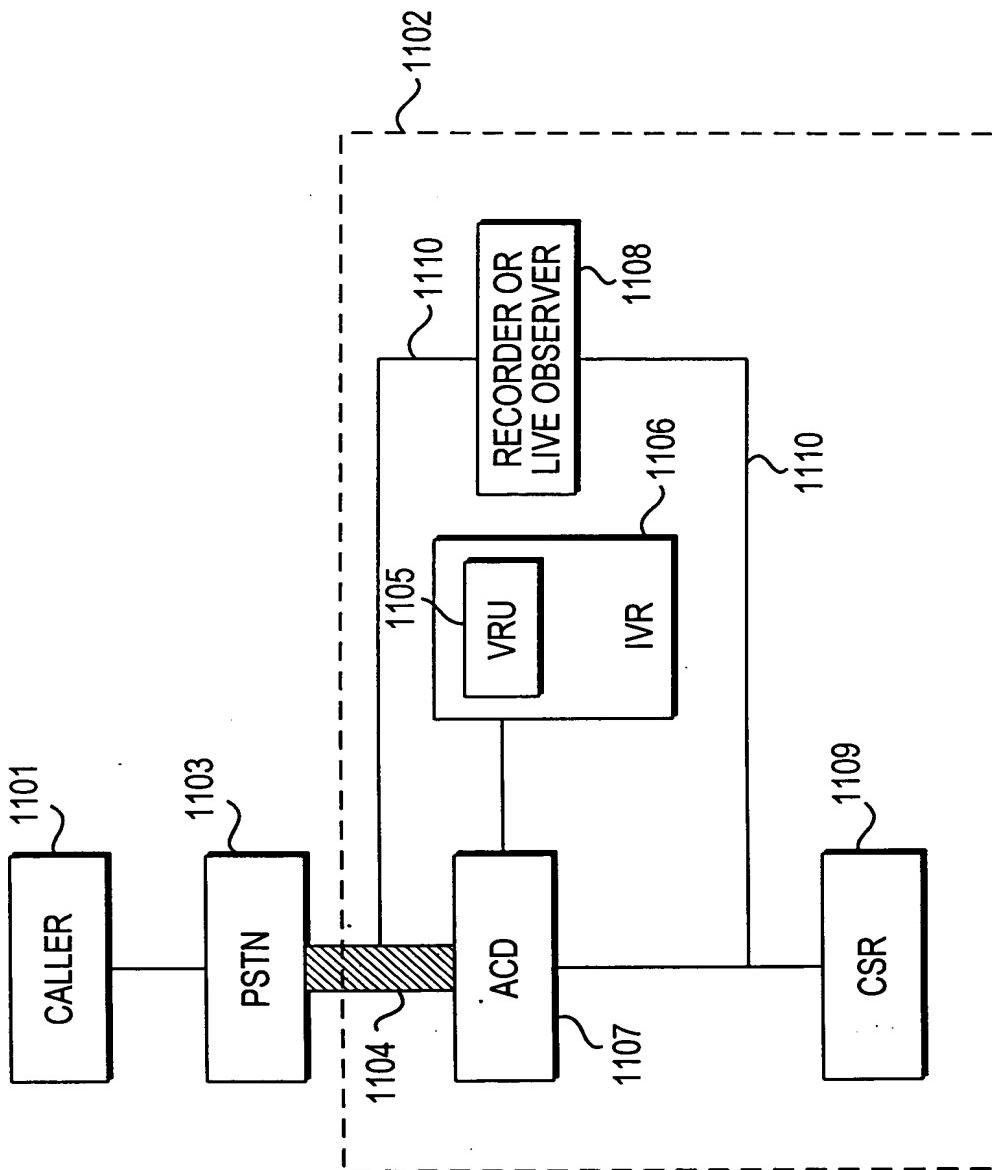


FIG. 2A

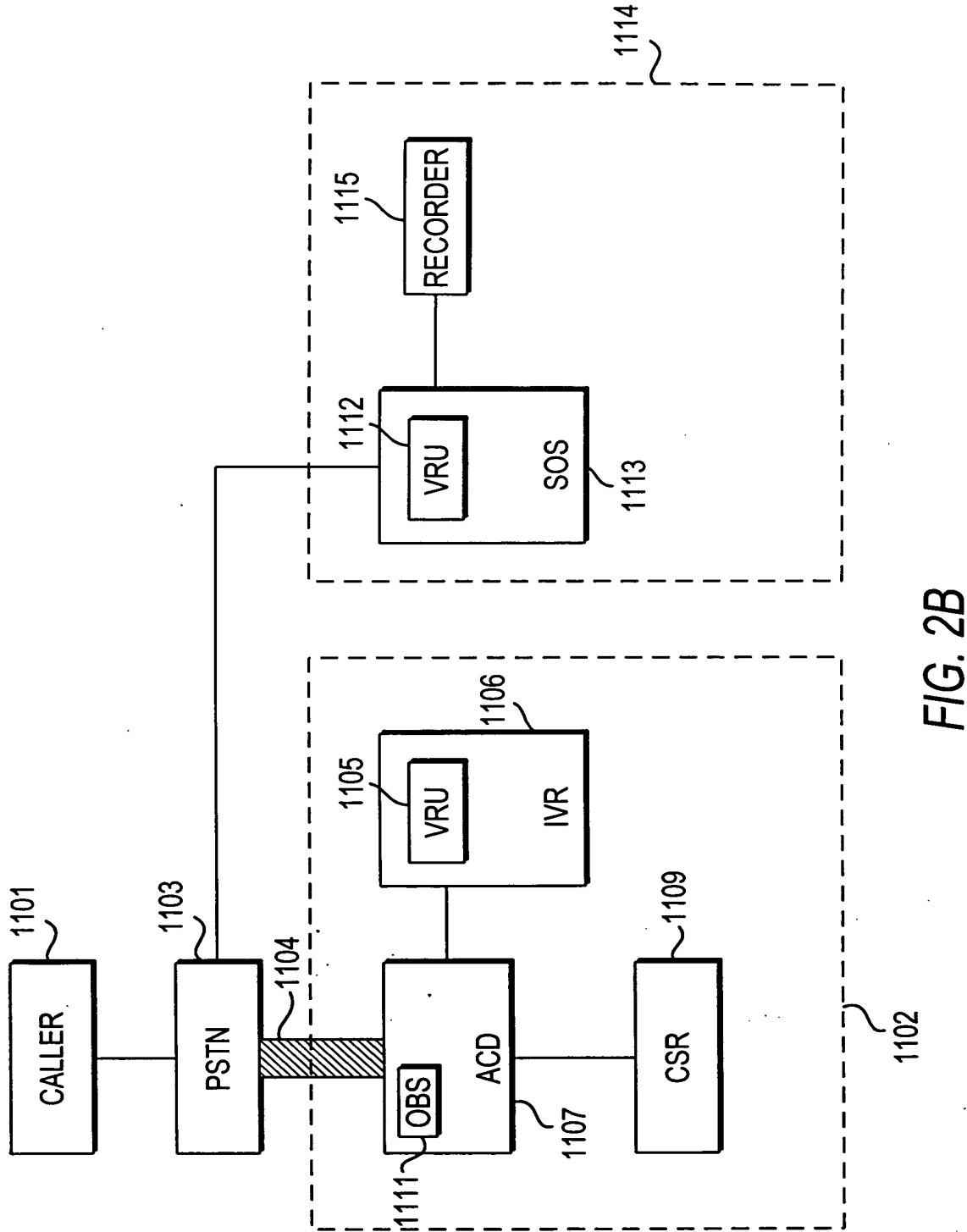


FIG. 2B

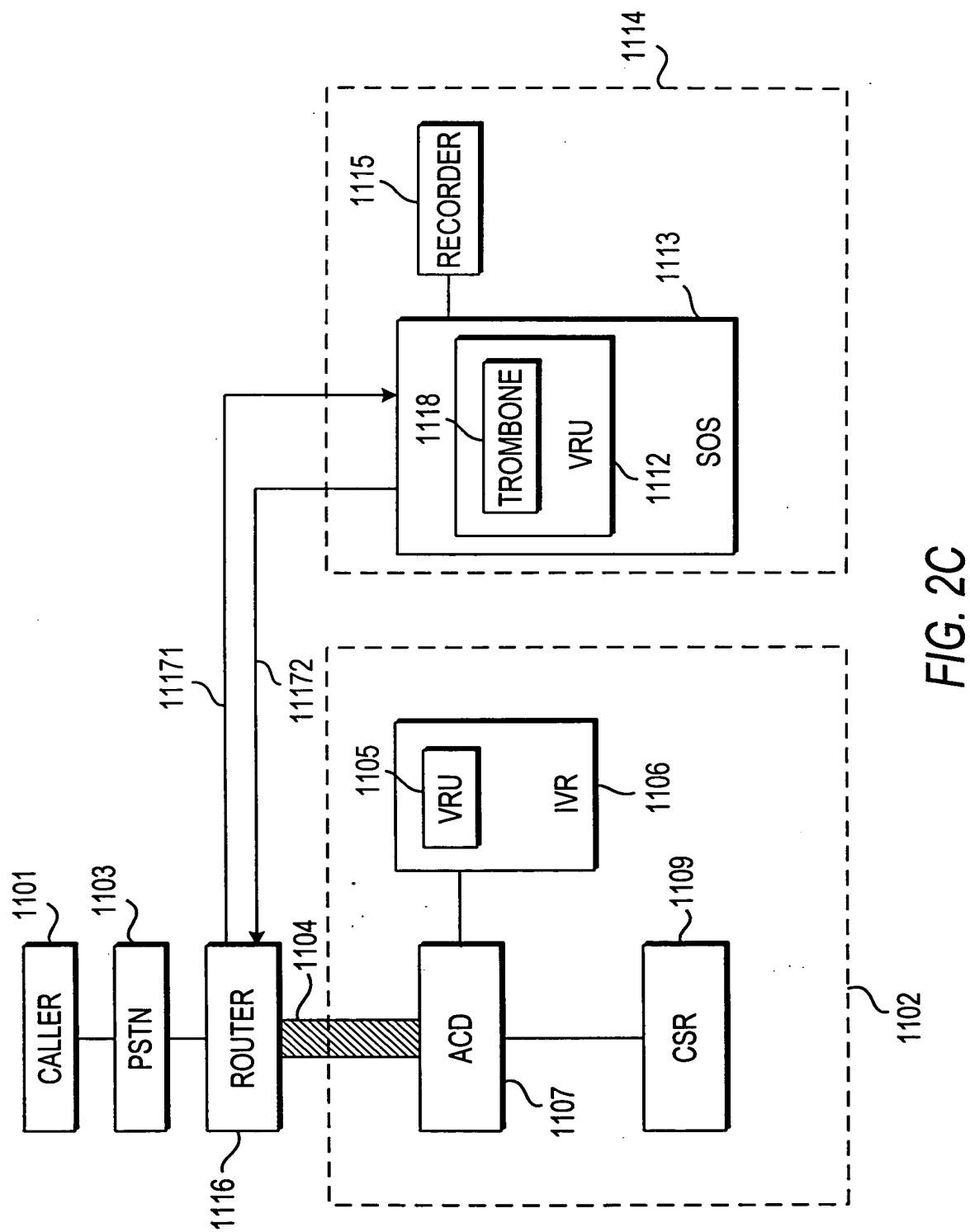
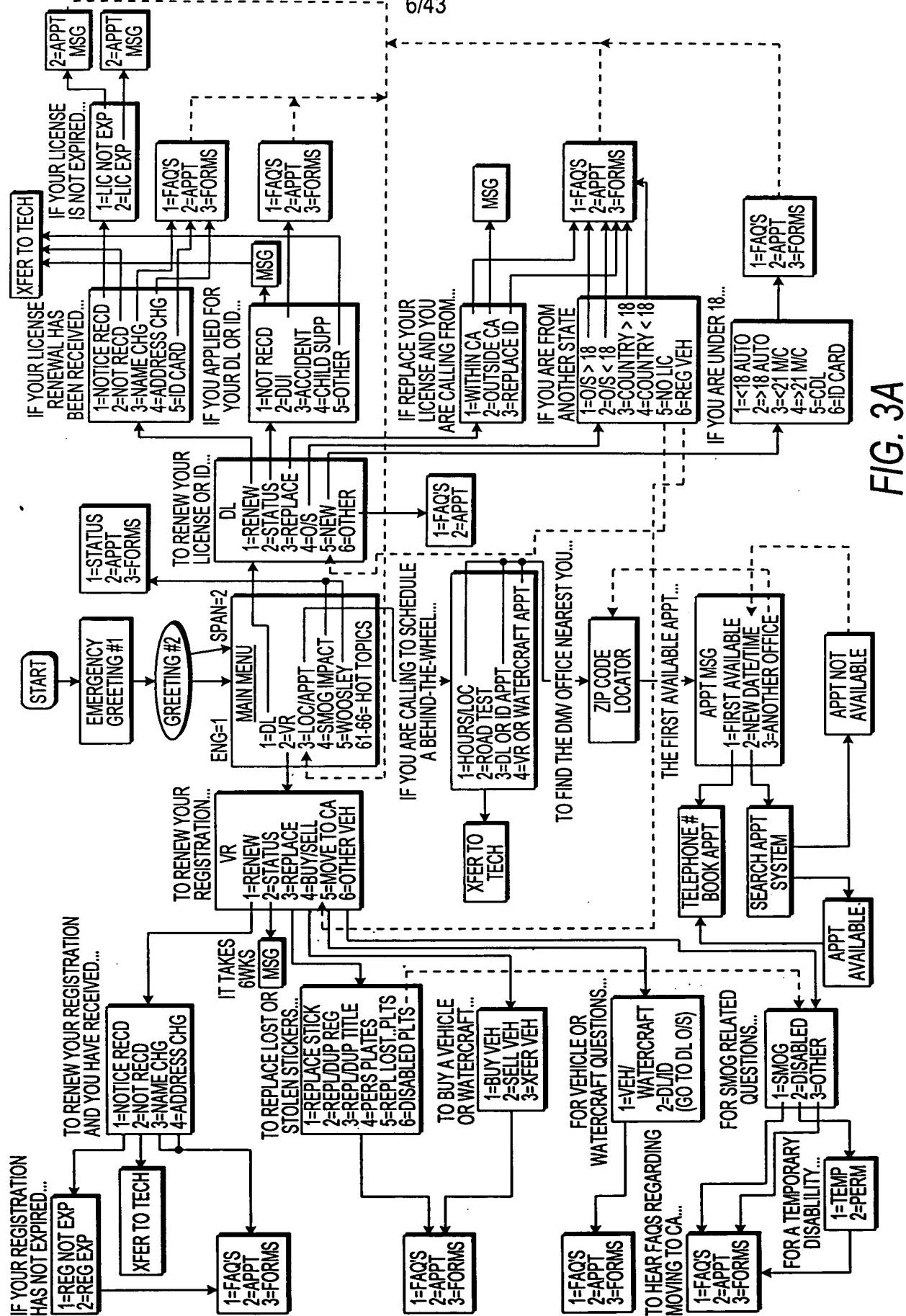


FIG. 2C

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APPARATUS AND METHOD FOR VISUALLY
PRESENTING EVENTS IN CALLS HANDLED BY AN
AUTOMATED RESPONSE SYSTEM
Express Mail No. EL029404355US

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FIG. 3C-1

FIG. 3C-2

FIG. 3B

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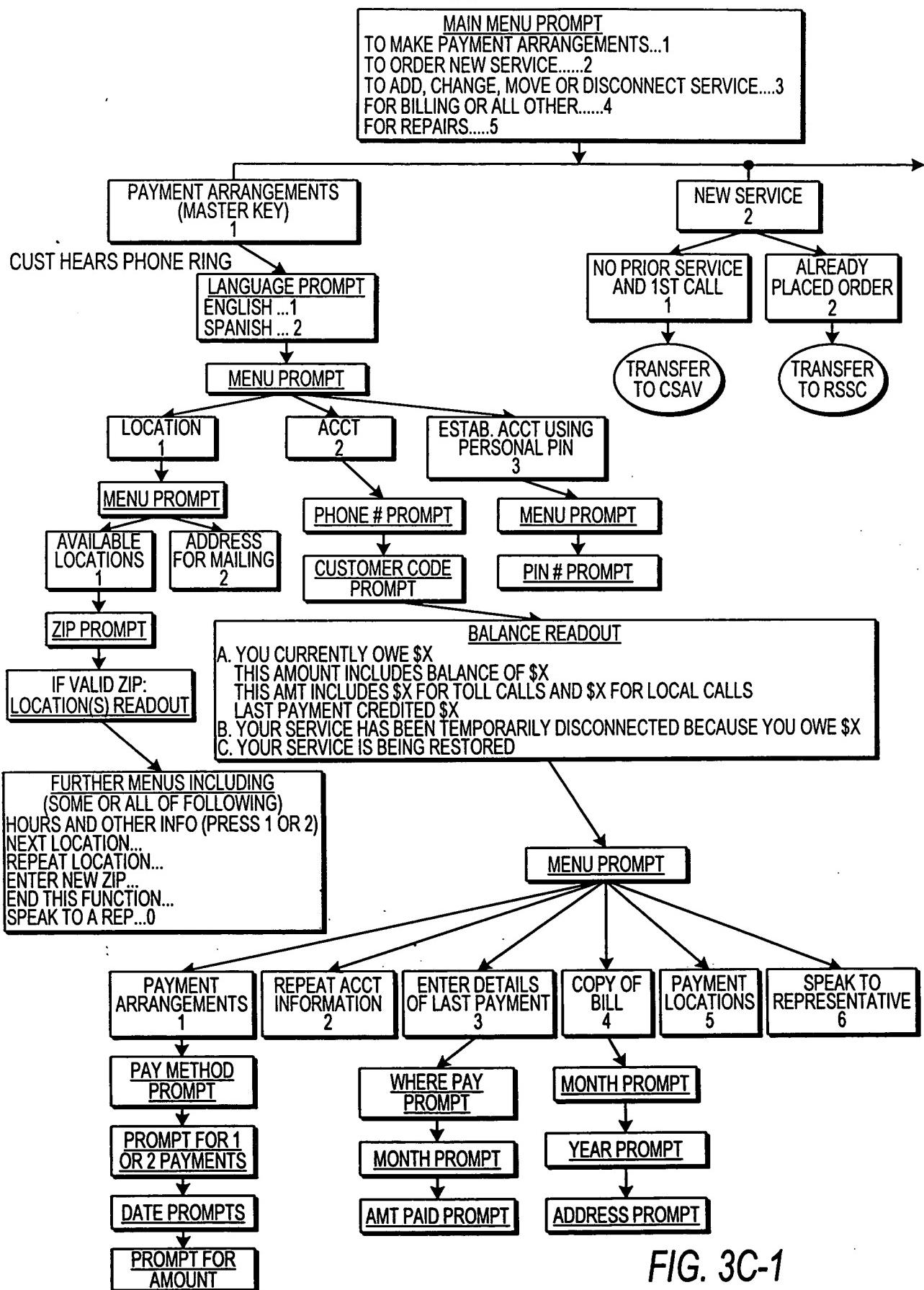


FIG. 3C-1

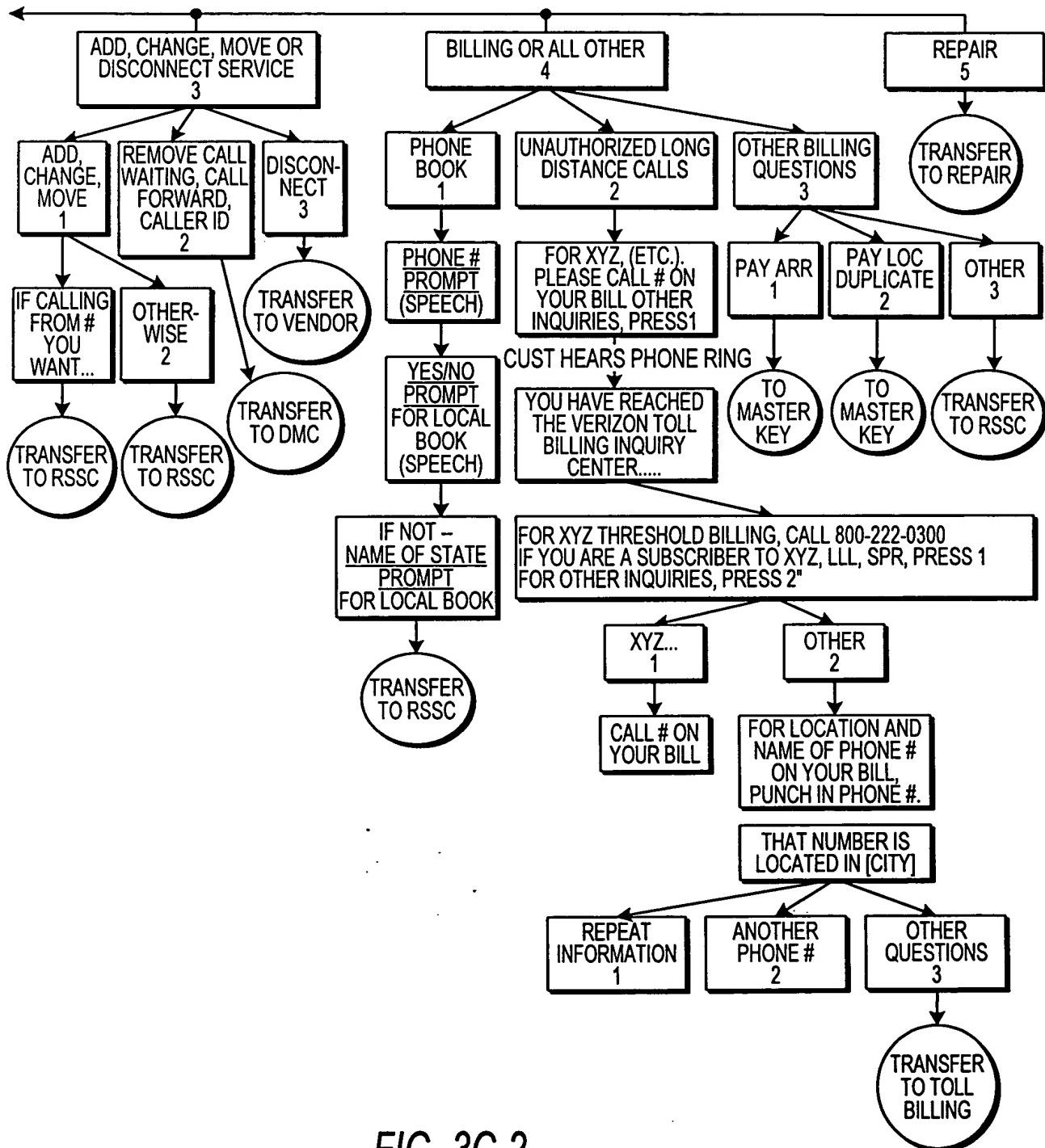


FIG. 3C-2

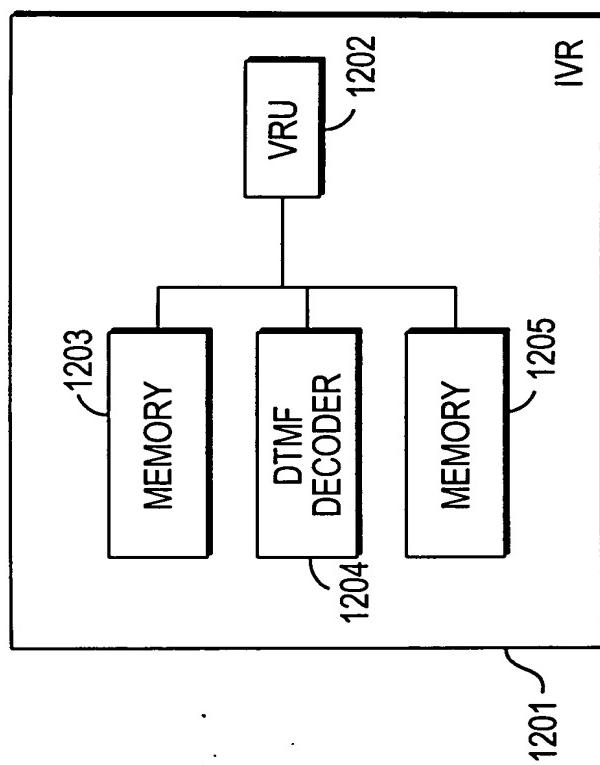


FIG. 3D

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| STATE | TIME | OUTCOME |
|----------------------------|----------|--|
| CALL ARRIVAL | ##.##.## | DATE; CALLER IDENTIFICATION |
| INITIAL MENU | ##.##.## | TOUCH TONE SELECTION, E.G., 3 |
| TELEPHONE NUMBER PROMPT | ##.##.## | TOUCH TONE NUMBERS PRESSED, E.G., 617-555-1212 |
| VALIDATE TELEPHONE NUMBER | ##.##.## | INVALID NUMBER |
| TELEPHONE NUMBER RE-PROMPT | ##.##.## | TOUCH TONE NUMBERS PRESSED |
| VALIDATE TELEPHONE NUMBER | ##.##.## | VALID NUMBER |
| MENU 1 | ##.##.## | TOUCH TONE SELECTION |
| QUERY A | ##.##.## | TOUCH TONE NUMBERS PRESSED |
| QUERY B | ##.##.## | TOUCH TONE NUMBERS PRESSED |
| MENU 2 | ##.##.## | TOUCH TONE SELECTION |
| TRANSFER TO AGENT | ##.##.## | TRANSFER QUEUE (CALLER ON HOLD) |
| IVR END | ##.##.## | TRANSFER COMPLETED |

FIG. 3E

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| UNIQUE ID | TIME | STATE | DATE | OUTCOME |
|--------------|----------|-----------------------|------|---------------------------------|
| 212-123-4567 | ##,##,## | CALL ARRIVAL | | |
| 212-123-4567 | ##,##,## | INITIAL MENU | | TOUCH TONE SELECTION |
| 212-123-4567 | ##,##,## | ACCOUNT NO. PROMPT | | TOUCH TONE NUMBERS PRESSED |
| 212-123-4567 | ##,##,## | VALIDATE NUMBER | | INVALID |
| 212-123-4567 | ##,##,## | ACCOUNT NO. RE-PROMPT | | CALL TERMINATED BY CALLER |
| 201-321-4567 | ##,##,## | CALL ARRIVAL | | DATE |
| 201-321-4567 | ##,##,## | INITIAL MENU | | TOUCH TONE SELECTION |
| 201-321-4567 | ##,##,## | ACCOUNT NO. PROMPT | | TOUCH TONE NUMBERS PRESSED |
| 201-321-4567 | ##,##,## | VALIDATE NUMBER | | VALID |
| 201-321-4567 | ##,##,## | MENU 1 | | TOUCH TONE SELECTION |
| 201-321-4567 | ##,##,## | TRANSFER TO AGENT | | TRANSFER COMPLETED |
| 617-987-6543 | ##,##,## | CALL ARRIVAL | | DATE |
| 617-987-6543 | ... | ... | ... | ... |
| 617-987-6543 | ##,##,## | ACCOUNT BALANCE | | INFORMATION DELIVERED |
| 617-987-6543 | ##,##,## | MENU 3 | | TOUCH TONE ELECTION |
| 617-987-6543 | ##,##,## | TRANSFER TO AGENT | | TRANSFER QUEUE (CALLER ON HOLD) |
| 617-987-6543 | ##,##,## | IVR END | | CALL TERMINATED BY CALLER |

F/G. 3F

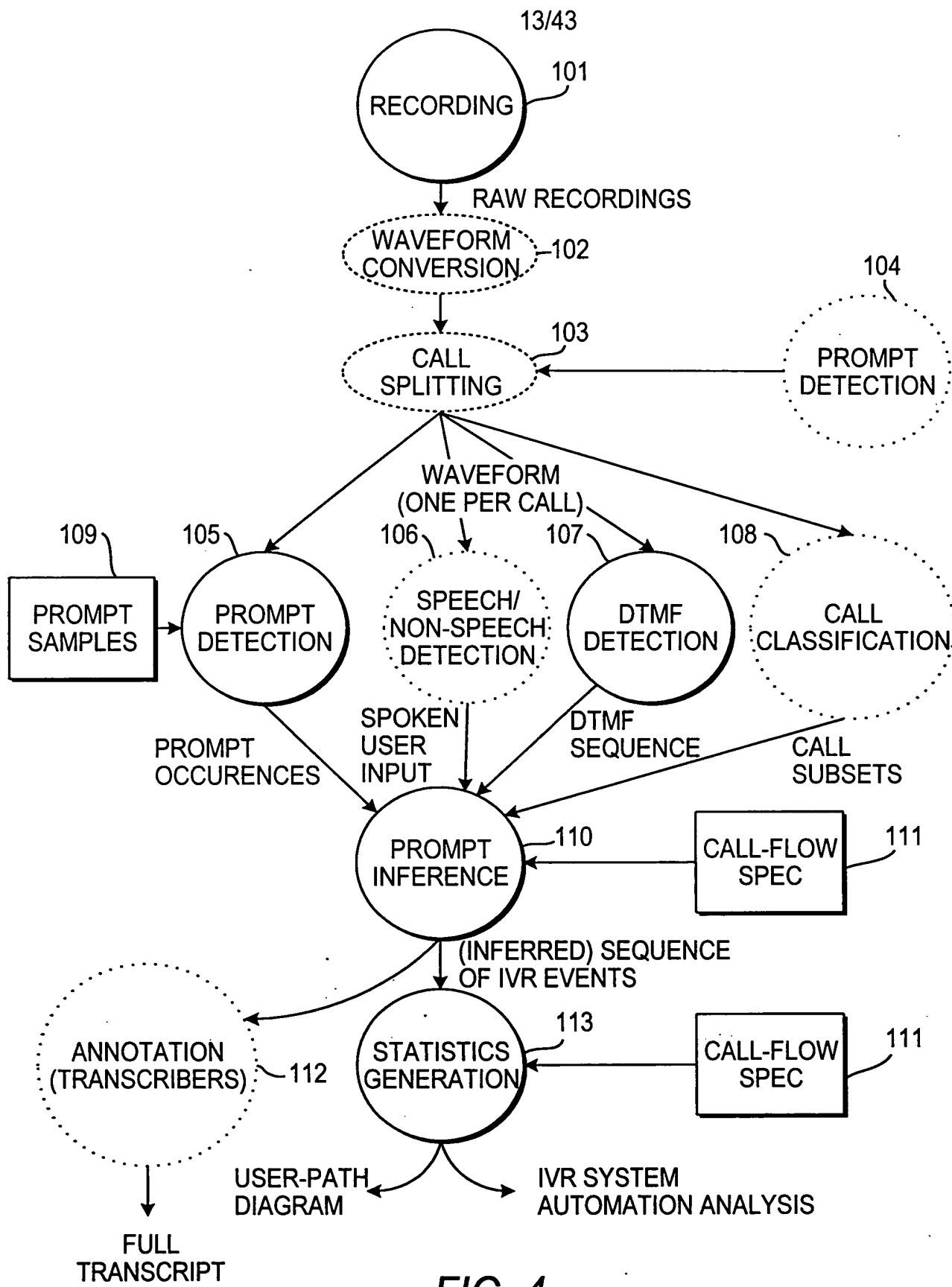


FIG. 4

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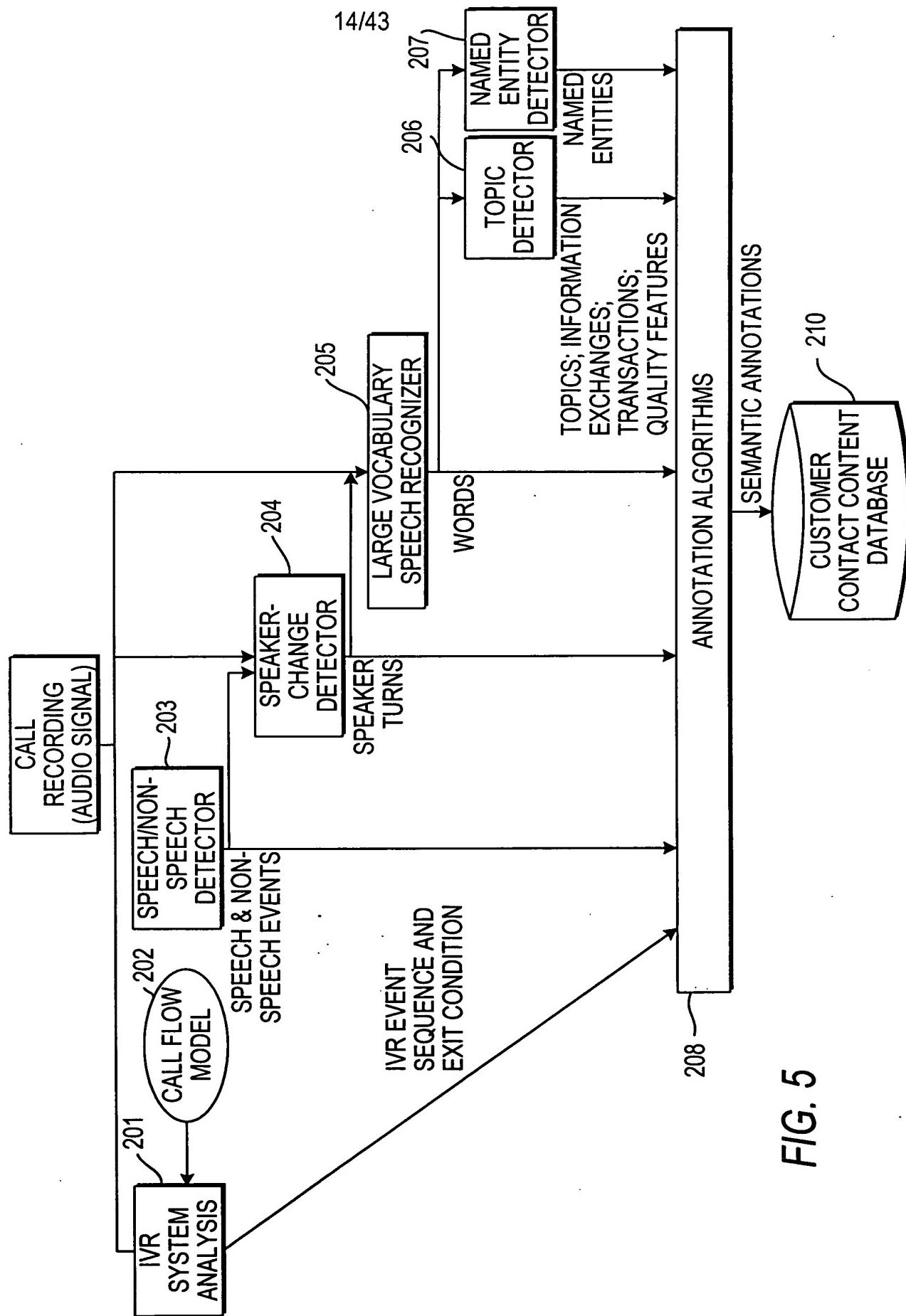


FIG. 5

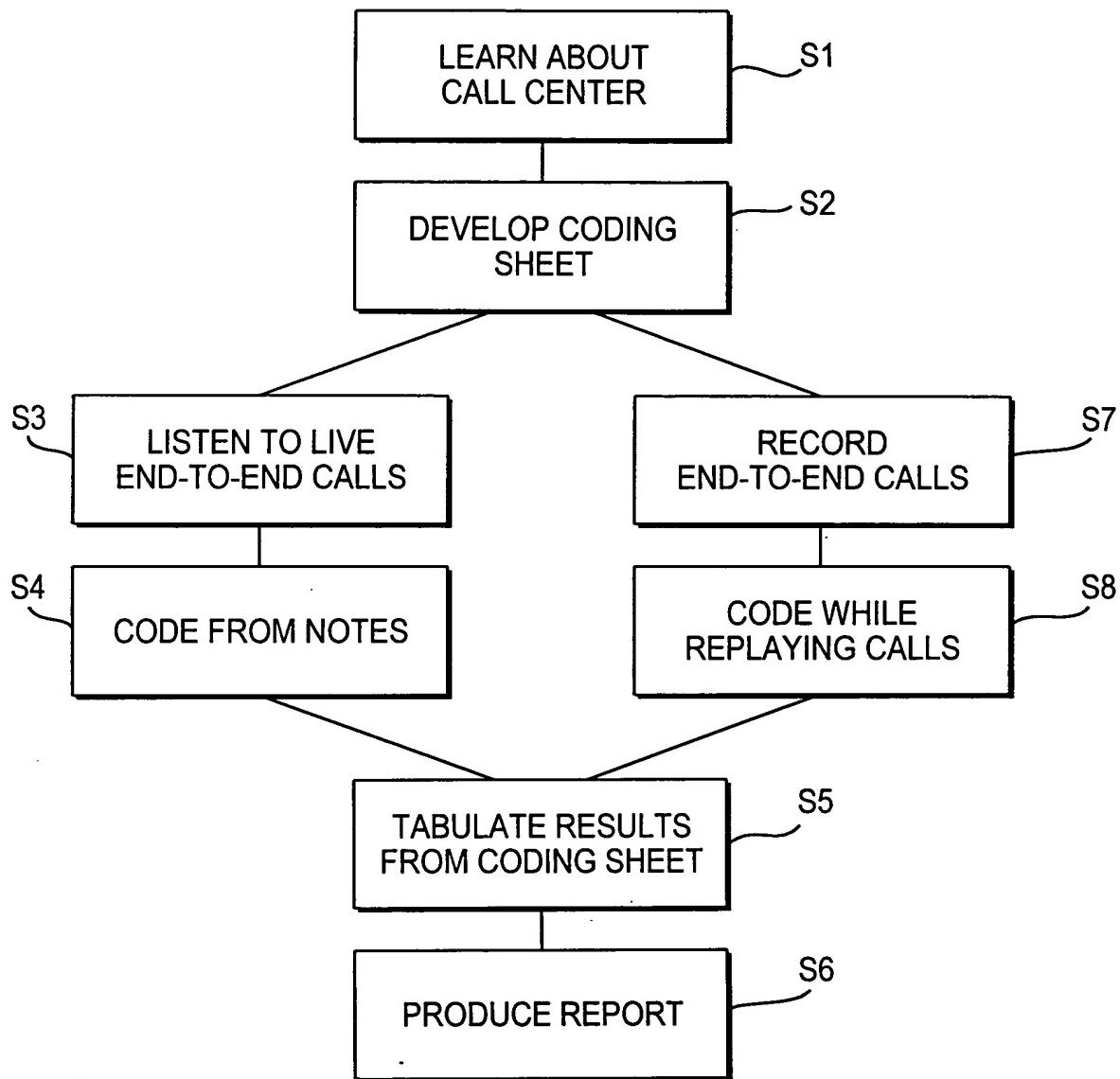


FIG. 6A

01-4004D; Katherine Godfrey et al.
APPARATUS AND METHOD FOR VISUALLY
REPRESENTING EVENTS IN CALLS HANDLED BY A
AUTOMATED RESPONSE SYSTEM
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FIG. 6B

FIG. 6B-1

FIG. 6B-2

FIG. 6B-3

FIG. 6B-4

2006 RELEASE UNDER E.O. 14176

01-4004D; Katherine Godfrey et al.
 APPARATUS AND METHOD FOR VISUALLY
 REPRESENTING EVENTS IN CALLS HANDLED BY
 AUTOMATED RESPONSE SYSTEM
 Express Mail No. EL029404355US

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| CALL NUMBER | 10 | 38 | 53 | 64 | N-10 | M-33 | M-71 | M-130 | M-178 | M-215 |
|--|------------|--------------|------------|------------|--------------------|----------------------------------|------------|------------|----------------|----------|
| TRANSCRIBER | YJT | YJT | YJT | 64 | MJW | MJW | MJW | MJW | MJW | MJW |
| DATE: | 12/14/1996 | 12/17/1996 | 12/19/1996 | 27-DEC | | | | | | |
| PHONE #: | 2121234567 | 2011234567 | 9141234567 | 9731234567 | 9181234567 | 7321234567 | 5161234567 | 2021234567 | 7181234567 | |
| SEX OF CALLER: | M | F | M | M | F | F | F | M | M | M |
| CLOCK TIME (END OF INTERACTION) | 1:58 PM | 12:03 PM | 2:40 PM | 2:21 PM | 12:41 PM | 14:50:41 | 14:30:57 | 9:46:48 | 12:10:21 | 12:01:11 |
| DURATION OF INTERACTION (WHOLE MIN) | 6 | 12 | 10 | 4 | 0 | 1 | 4 | 9 | 3 | |
| DURATION OF ENTIRE CALL (WHOLE MIN) | 6 | 12 | 11 | 5 | 3 | 3 | 12 | 68 | 5 | |
| WAS THIS A FULLY AUTOMATED CALL? | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| DID CALL INVOLVE AN AGENT? | 0 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | |
| DEBUG | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| IVR SUMMARY: (MENU CHOICES) | 4 | 31 | 31 | 40 | INVALID | BILLING, OTHER ADD/CHANGE REPAIR | NEW, 0 | NEW | BILLING, OTHER | |
| (USE WORDS: "PHONE #", "RING", "FAST BUSY", "HANG UP", "ROTARY") | 3 | PHONE NO | 3 | OTHER | ADD/CHANGE | INPUT NUMBER 22 | OTHER | | | |
| DID CALLER TRY 0 AND FAIL? | 0 | HANG UP RING | 3 | 4, 3, 3 | 3, 1, 973-622-3326 | | 4, 3, 3 | | | |
| WAS CALL INCOMPLETE (0 FUNCTIONS?) | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | |
| (IF 1, INDICATE WHICH ONE APPLIES) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| ABANDON AT START OF IVR (RINGING OR INTRO) | | | | | | | | | | |
| ABANDON AT PHONE # PROMPT | | | | | | | | | | |
| ABANDON AT CUSTOMER ID PROMPT | 1 | | | | | | | | | |
| ABANDON AT OTHER PROMPT | 1 | | | | | | | | | |
| ABANDON WHILE RINGING FOR AGENT | | | | | | | | | | |
| ABANDON AT "ALL OUR AGENTS ARE CURRENTLY" | | | | | | | | | | |
| ABANDON AT FAST BUSY OR SYSTEM BUG | | | | | | | | | | |
| UNUSUALLY HEAVY CALL VOLUMES | | | | | | | | | | |
| WHERE IN IVR DID THEY ABANDON | | | | | | | | | | |
| 1 MASTERKEY | | | | | | | | | | |
| 2 NEW SERVICE | | | | | | | | | | |
| 3 ADD/CHANGE | | | | | | | 1 | | | |
| 4 BILLING/OTHER | | | | | | | | | | |
| 5 REPAIR | | | | | | | | | | |
| (IF CALLER GOT TO AN AGENT, HOW?) | | | | | | | | | | |
| BY ROTARY PHONE (0 TONES PRESSED?) | | | | | | | | | | |
| BY AUTO TRANSFER BASED ON PHONE NUMBER? | | | | | | | | | | |
| THROUGH INTRODUCTION BY PREVIOUS AGENT? | | | | | | | | | | |
| INVR THROUGH INVALID/TIMEOUT? | | | | | | | | | | |
| INVR THROUGH A VALID NONZERO TRANSFER? BY PRESSING "0" | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| OTHER (DIDN'T CATCH IT) | | | | | | | | | | |
| INDICATE MENU CHOICES MADE IN IVR | | | | | | | | | | |
| 1. PAY ARRANGEMENTS (MASTER KEY) | | | | | | | | | | |
| 2-1 ORDER NEW SERVICE (WELCOME CENTER) | | | | | | | | | | |

FIG. 6B-1

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REPRESENTING EVENTS IN CALLS HANDLE
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| INDICATE WHICH ONES! | | | | |
|--|---|---|---|---|
| REQUEST CALLING CARD | | | | |
| GET VOICE MAIL ACCESS # | | | | |
| GET 3 + 2 DIGIT NUMBER ON BILL | | | | |
| GET INFO ON RATES BY MAIL OR SEE DIRECT. | | | | |
| GET ADDRESS FOR WRITING TO REFUTE BILL | | | | |
| OTHER: (POSSIBLY AUTOMATABLE) | | | | |
| III. DID AGENT DO NON-AUTOMATED FUNCTIONS? INDICATE WHICH ONES! | 0 | 1 | 1 | 1 |
| PAYMENT ARRANGEMENTS | | | | |
| NEW SERVICE- EXPLAINS 2 PARTS NEEDED | | | | |
| NEW SERVICE FOLLOW UP (NOT DISCONNECT) | | | | |
| CHECK ON STATUS OF PENDING ORDER | | | | |
| SALES (PKGS. SERVICES, LINES, JACKS, ETC) | | | | |
| SALES (REMOVE FEATURE AGENT ASKS WHY) | 1 | 1 | 1 | 1 |
| DISCONNECT (AND FORWARD CALLS) | | | | |
| EXPLAIN BILL | | | | |
| REMOVE UNAUTHORIZED CALL FROM BILL | | | | |
| REMOVE OTHER CHARGES FROM BILL | | | | |
| CONFIRM TODAY'S REPAIR SCHEDULE | | | | |
| SCHEDULE A VISIT WITH REPAIRMAN | | | | |
| TELL HOW/WHEN TO USE FEATURES THEY OWN | | | | |
| OTHER | 1 | 2 | 2 | 2 |
| WAS THIS CALL CODED ABOVE? | 2 | 2 | 2 | 2 |
| DID AGENT SEE CALL AS MISDIRECTED? | | | 1 | 1 |
| DID AGENT TRANSFER THE CALL? | | | 1 | 1 |
| IV. IF TRANSFERRED, TO WHAT DESTINATION? | 0 | 0 | 0 | 0 |
| 800-281-8534 MASTER KEY | | | | |
| 800-275-2355 REPAIR | | | | |
| 800-287-9333 COLLECTION CENTER | | | | |
| 800-870-0100 SERVICE SOLUTIONS | | | | |
| TPV | | | | |
| 888-243-9733 TOLL BILLING | | | | |
| 800-246-2800 UNLAWFUL CALL SOL CTR | | | | |
| 800-585-6177 INSTALLATION HOTLINE | | | | |
| 877-525-2315 DSL | | | | |
| 800-427-9977 "BUSINESS OFFICE" | | | | |
| DMC | | | | |
| NEW SERVICE FOLLOWUP | | | | |
| DISCONNECT | | | | |
| TELL HOW TO USE FEATURES | | | | |
| WELCOME CENTER | | | | |
| BUSINESS ACCOUNTS | | | | |

FIG. 6B-3

FIG. 6B-4

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APPARATUS AND METHOD FOR VISUALLY
REPRESENTING EVENTS IN CALLS HANDLED BY
AUTOMATED RESPONSE SYSTEM
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FIG. 6C

FIG. 6C-1

FIG. 6C-2

FIG. 6C-3

FIG. 6C-4

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| | A | C | D | E |
|----|--|----------------------|-----|---|
| 1 | CALL NUMBER | ALL CALLS STATISTICS | | |
| 2 | TRANSCRIBER | | | |
| 3 | DATE: | | | |
| 4 | PHONE #: | | | |
| 5 | SEX OF CALLER: | | | |
| 6 | CLOCK TIME (END OF INTERACTION) | | | |
| 7 | DURATION OF INTERACTION (WHOLE MIN) | 5.123042506 | 0% | |
| 8 | DURATION OF ENTIRE CALL (WHOLE MIN) | 7.548098434 | 0% | |
| 9 | WAS THIS A FULLY AUTOMATED CALL? | 14 | 3% | |
| 10 | DID CALL INVOLVE AN AGENT? | 339 | 447 | |
| 11 | | | | |
| 12 | IVR SUMMARY: (MENU CHOICES) | 0 | 0% | |
| 13 | (USE WORDS: "PHONE #" "RING" "FAST BUSY" | 0 | 0% | |
| 14 | "HANG UP" "ROTARY" | 0 | 0% | |
| 15 | | | | |
| 16 | DID CALLER TRY 0 AND FAIL? | 30 | 7% | |
| 17 | WAS CALL INCOMPLETE (0 FUNCTIONS?) | 94 | 21% | |
| 18 | [IF 1, INDICATE WHICH ONE APPLIES] | 0 | 0% | |
| 19 | ABANDON AT START OF IVR (RINGING OR INTRO) | 0 | 0% | |
| 20 | ABANDON AT PHONE # PROMPT | 4 | 1% | |
| 21 | ABANDON AT CUSTOMER ID PROMPT | 2 | 0% | |
| 22 | ABANDON AT PROMPT | 22 | 5% | |
| 23 | ABANDON WHILE RINGING FOR AGENT | 2 | 0% | |
| 24 | ABANDON AT "ALL OUR AGENTS ARE CURRENTLY" | 4 | 1% | |
| 25 | ABANDON AT FAST BUSY OR SYSTEM BUG | 14 | 3% | |
| 26 | UNUSUALLY HEAVY CALL VOLUMES | 17 | 4% | |
| 27 | OTHER: | 29 | 6% | |
| 28 | WHERE IN IVR DID THEY ABANDON | | | |
| 29 | 1 MASTERKEY | 20 | 4% | |
| 30 | 2 NEW SERVICE | 3 | 1% | |
| 31 | 3 ADD/CHANGE | 13 | 3% | |
| 32 | 4 BILLING/OTHER | 12 | 3% | |
| 33 | 5 REPAIR | 2 | 0% | |
| 34 | OTHER | 18 | 4% | |
| 35 | | | | |
| 36 | [IF CALLER GOT TO AN AGENT, HOW?] | 0 | 0% | |
| 37 | BY ROTARY PHONE (0 TONES PRESSED)? | 62 | 14% | |
| 38 | BY AUTO TRANSFER BASED ON PHONE NUMBER? | 0 | 0% | |
| 39 | THROUGH INTRODUCTION BY PREVIOUS AGENT? | 0 | 0% | |
| 40 | IN IVR THROUGH INVALID/TIMEOUT? | 28 | 6% | |
| 41 | IN IVR, THROUGH A VALID NONZERO TRANSFER? | 228 | 51% | |
| 42 | BY PRESSING "0" | 19 | 4% | |
| 43 | OTHER (DIDN'T CATCH IT) | 2 | 0% | |
| 44 | INDICATE MENU CHOICES MADE IN IVR | 0 | 0% | |
| 45 | 1. PAY ARRANGEMENTS (MASTER KEY) | 12 | 3% | |
| 46 | 2-1 ORDER NEW SERVICE (WELCOME CENTER) | 28 | 6% | |
| 47 | 2-2 NEW SERVICE - FOLLOW -UP | 37 | 8% | |
| 48 | 3-1 ADD/ADD | 64 | 14% | |
| 49 | 3-2 ADD/REMOVE | 12 | 3% | |

FIG. 6C-1

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| | A | C | D | E |
|----|---|----|-----|---|
| 50 | 3-3 DISCONNECT | 11 | 2% | |
| 51 | 4-1 BILLING/PHONE DIRECTORY | 1 | 0% | |
| 52 | 4-2 BILLING/ UNAUTHORIZED CALLS | 11 | 2% | |
| 53 | 4-3-1 BILLING/OTHER/PAY/MASTER K | 3 | 1% | |
| 54 | 4-3-2 BILLING/OTHER/MASTER KEY | 11 | 2% | |
| 55 | 4-3-3 BILLING/OTHER/OTHER | 71 | 16% | |
| 56 | 5 REPAIR (REPAIR CENTER) | 14 | 3% | |
| 57 | 1-2 (SPANISH) | 1 | 0% | |
| 58 | [INDICATE FUNCTIONS COMPLETED IN IVR] | 0 | 0% | |
| 59 | PAYMENT CENTER LOCATION | 3 | 1% | |
| 60 | PAYMENT CENTER HOURS | 0 | 0% | |
| 61 | PAYMENT MAILING ADDRESS | 2 | 0% | |
| 62 | ACCOUNT INFORMATION | 14 | 3% | |
| 63 | ESTABLISH ACCT USING PIN | 0 | 0% | |
| 64 | PAYMENT ARRANGEMENTS | 1 | 0% | |
| 65 | ENTER DETAILS OF LAST PAYMENT | 0 | 0% | |
| 66 | COPY OF BILL | 0 | 0% | |
| 67 | ORDER PHONE DIRECTORY | 0 | 0% | |
| 68 | IDENTIFY UNAUTH CALL | 4 | 1% | |
| 69 | GET 800 # TO IDENTIFY UNAUTH CALLS-ETC. | 3 | 1% | |
| 70 | | | | |
| 71 | AGENT CALL SUMMARY: (PROBLEM + SOLUTION) | | | |
| 72 | | | | |
| 73 | | | | |
| 74 | COULD THIS HAVE BEEN DONE IN MK/TB | 24 | 5% | |
| 75 | | | | |
| 76 | I. DID AGENT PERFORM AUTOMATED FUNCTIONS? | 25 | 6% | |
| 77 | [INDICATE WHICH ONES] | | | |
| 78 | PAYMENT CENTER LOCATION | 0 | 0% | |
| 79 | PAYMENT CENTER HOURS | 0 | 0% | |
| 80 | PAYMENT MAILING ADDRESS | 0 | 0% | |
| 81 | ACCOUNT INFORMATION | 9 | 2% | |
| 82 | ESTABLISH ACCT USING PIN | 0 | 0% | |
| 83 | PAYMENT ARRANGEMENTS | 5 | 1% | |
| 84 | ENTER DETAILS OF LAST PAYMENT | 0 | 0% | |
| 85 | COPY OF BILL | 5 | 1% | |
| 86 | ORDER PHONE DIRECTORY | 1 | 0% | |
| 87 | IDENTIFY ABC UNAUTH CALL | 5 | 1% | |
| 88 | IDENTIFY XYZ ETC. UNAUTH CALL | 0 | 0% | |
| 89 | | | | |
| 90 | II. DID AGENT DO POTENTIALLY AUTO FUNCTIONS? | 16 | 4% | |
| 91 | [INDICATE WHICH ONES] | | | |
| 92 | FIND TOLL CALL RANGE | 8 | 0% | |
| 93 | REQUEST CALLING CARD | | | |
| 94 | GET VOICE MAIL ACCESS # | 3 | 0% | |
| 95 | GET 3+2 DIGIT NUMBER ON BILL | 2 | 0% | |
| 96 | GET INFO ON RATES-BY MAIL OR SEE DIRECT | 0 | 0% | |
| 97 | GET ADDRESS FOR WRITING TO REFUTE BILL | 0 | 0% | |

FIG. 6C-2

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| | A | C | D | E |
|-----|--|-----|-------------|---|
| 98 | OTHER: (POTENTIALLY AUTOMATABLE) | 3 | 0% | |
| 99 | | | | |
| 100 | III. DID AGENT DO NON-AUTOMATED FUNCTIONS? | 220 | 49% | |
| 101 | [INDICATE WHICH ONES] | | | |
| 102 | PAYMENT ARRANGEMENTS | 5 | 1% | |
| 103 | NEW SERVICE- EXPLAINS 2 PARTS NEEDED | 21 | 5% | |
| 104 | NEW SERVICE FOLLOW UP (NOT DISCONNECT) | 10 | 2% | |
| 105 | CHECK ON STATUS OF PENDING ORDER | 6 | 0% | |
| 106 | SALES (PKGS, SERVICES, LINES, JACKS, ETC) | 65 | 15% | |
| 107 | SALES (REMOVE FEATURE- AGENT ASKS WHY) | 16 | 4% | |
| 108 | DISCONNECT (AND FORWARD CALLS) | 9 | 2% | |
| 109 | EXPLAIN BILL | 25 | 6% | |
| 110 | REMOVE UNAUTHORIZED CALL FROM BILL | 4 | 1% | |
| 111 | REMOVE OTHER CHARGES FROM BILL | 2 | 0% | |
| 112 | CONFIRM TODAY'S REPAIR SCHEDULE | 3 | 1% | |
| 113 | SCHEDULE A VISIT WITH REPAIRMAN | 8 | 2% | |
| 114 | TELL HOW/WHEN TO USE FEATURES THEY OWN | 12 | 3% | |
| 115 | OTHER | 34 | 8% | |
| 116 | WAS THIS CALL CODED ABOVE? | 675 | 579 | |
| 117 | DID AGENT SEE CALL AS MISDIRECTED? | 81 | 18% | |
| 118 | DID AGENT TRANSFER THE CALL? | 82 | 18% | |
| 119 | IV. IF TRANSFERRED, TO WHAT DESTINATION? | 0 | 0% | |
| 120 | 800-281-8584 MASTER KEY | 0 | 0% | |
| 121 | 800-275-2355 REPAIR | 12 | 3% | |
| 122 | 800-287-9933 COLLECTION CENTER | 10 | 2% | |
| 123 | 800-870-0000 SERVICE SOLUTIONS | 0 | 0% | |
| 124 | TPV | 1 | 0% | |
| 125 | 888-243-9733 TOLL BILLING | 9 | 2% | |
| 126 | 800-246-2800 UNLAWFUL CALL SOL CTR | 0 | 0% | |
| 127 | 800-585-6127 INSTALLATION HOTLINE | 11 | 2% | |
| 128 | 877-525-2375 DSL | 2 | 0% | |
| 129 | 800-427-9977 "BUSINESS OFFICE" | 1 | 0% | |
| 130 | DMC | 1 | 0% | |
| 131 | NEW SERVICE FOLLOWUP | 1 | 0% | |
| 132 | DISCONNECT | 1 | 0% | |
| 133 | TELL HOW TO USE FEATURES | 1 | 0% | |
| 134 | WELCOME CENTER | 10 | 2% | |
| 135 | BUSINESS ACCOUNTS | 2 | 0% | |
| 136 | ISP CALL/VERIZON ONLINE | 2 | 0% | |
| 137 | WIRELESS | 3 | 1% | |
| 138 | DIFFERENT CARRIER | 2 | 0% | |
| 139 | SUPERVISOR | 0 | 0% | |
| 140 | OTHER | 3 | 1% | |
| 141 | TRANSFER TO SPANISH AGENT | 6 | 1% | |
| 142 | WAS TRANSFER WARM (AGENT STAYED)? | 34 | 8% | |
| 143 | DURATION WITH SECOND AGENT? | 663 | 0.292715232 | |
| 144 | FURTHER TRANSFERS? | 14 | 3% | |
| 145 | [IF YES] | | | |
| 146 | TOTAL NUMBER OF AGENTS INVOLVED | 205 | 9% | |

FIG. 6C-3

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| | A | C | D | E |
|-----|---|-----|---|---|
| 147 | | | | |
| 148 | EXPLAIN: | | | |
| 149 | | | | |
| 150 | TOPIC SUMMARY | | | |
| 151 | PAYMENT ARRANGEMENT | 10 | | |
| 152 | NEW SERVICE | 21 | | |
| 153 | ORDER FOLLOW-UP | 16 | | |
| 154 | SALES-ADD | 65 | | |
| 155 | SALES-REMOVE | 16 | | |
| 156 | DISCONNECT | 9 | | |
| 157 | PHONE DIRECTORY | 1 | | |
| 158 | UNAUTHORIZED CALLS | 9 | | |
| 159 | BALANCE/COPY... | 14 | | |
| 160 | OTHER | 89 | | |
| 161 | REPAIR | 11 | | |
| 162 | SPANISH | 6 | | |
| 163 | REROUTE | | | |
| 164 | | 267 | | |
| 165 | | | | |
| 166 | | | | |
| 167 | | | | |
| 168 | | | | |
| 169 | | | | |
| 170 | | | | |
| 171 | | | | |
| 172 | | | | |
| 173 | | | | |
| 174 | ROUTING SUMMARY | | | |
| 175 | 1 OR 4-3-1 PAY ARRANGMENTS (MASTER KEY) | | | |
| 176 | 2-1 ORDER NEW SERVICE (WELCOME CENTER) | | | |
| 177 | 2-2 NEW SERVICE-FOLLOW-UP | | | |
| 178 | 3-1 ADD/ADD | | | |
| 179 | 3-2 ADD/REMOVE | | | |
| 180 | 3-3 DISCONNECT | | | |
| 181 | 4-1 BILLING/PHONE DIRECTORY | | | |
| 182 | 4-2 BILLING/UNAUTHORIZED CALLS | | | |
| 183 | 4-3-2 BALANCE/COPY/LOCATIONS/LAST PAYMENT | | | |
| 184 | 4-3-3 OTHER | | | |
| 185 | 5 REPAIR (REPAIR CENTER) | | | |
| 186 | 1-2 (SPANISH) | | | |
| 187 | ROTARY (INITIAL TIMEOUT) | | | |
| 188 | INVALID, TIMEOUT, OR "0" ONCE IN IVR | | | |
| 189 | OTHER (UNKNOWN) | | | |

FIG. 6C-4

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| DATA | CONCLUSION |
|--|---|
| 1. CUSTOMER ROUTES SELF IN IVR TO WRONG AGENT 2. AGENT TRANSFERS CUSTOMER IN RESPONSE TO CUSTOMER NEED. | MISROUTING (2 OR MORE AGENTS INVOLVED INSTEAD OF 1) |
| 1. CUSTOMER ROUTES SELF IN IVR TO WRONG AGENT 2. AGENT PERFORMS FUNCTION ANYWAY. | MISROUTING (WRONG AGENT INVOLVED) |
| 1. AGENT PERFORMS FUNCTION. 2. FUNCTION IS AVAILABLE IN IVR. | UNDERUTILIZATION OF IVR FUNCTIONALITY. |
| 1. AGENT PERFORMS FUNCTION 2. FUNCTION NOT CURRENTLY AVAILABLE IN IVR. 3. FUNCTION COULD POTENTIALLY BE ADDED | IVR MISSING CRUCIAL FUNCTIONALITY |
| 1. CUSTOMERS OPTING OUT OF IVR AT FEW POPULAR POINTS. 2. IVR DOES NOT PROMPT FOR ID AT THE POINT. | MISSED OPPORTUNITY FOR AUTOMATED CUSTOMER DATA INPUT |
| 1. AGENT STAYS ON THE LINE DURING TRANSFER 2. POLICY DOES NOT ADVOCATE A "WARM TRANSFER" | POSSIBLE POLICY VIOLATION (REGARDING WARM TRANSFERS) |
| 1. AGENT STAYS ON THE LINE DURING TRANSFER 2. TIME ON HOLD WITH CUSTOMER SUGGESTS AGENT NOT USING SPECIAL QUEUE FOR TRANSFER | POSSIBLE POLICY VIOLATION (REGARDING USE OF FAST QUEUE FOR AGENT TRANSFERS) |
| 1. # CUSTOMERS REMAINING SILENT IN IVR 2. PERCENTAGE OF ROTARY USERS KNOWN 3. IF 1 SUBSTANTIALLY EXCEEDS 2 | CUSTOMERS REFUSING TO PLAY THE GAME |
| 1. # CUSTOMERS COOPERATING IN IVR 2. # CUSTOMERS GETTING READOUT BEFORE ABANDONING IF 1 SUBSTANTIALLY EXCEEDS 2 | CUSTOMERS RECEIVING NO BENEFIT FROM IVR THOUGH WILLING TO TRY |
| 1. # CALLS 2. # CALLERS COMPLETING AT LEAST 1 FUNCTIONS IN IVR (INCLUDING GETTING READOUT) AND NOT GOING TO AGENT IF 1 SUBSTANTIALLY EXCEEDS 2 | LOW "COMPLETE-SELF-SERVE" RATE |

FIG. 6D

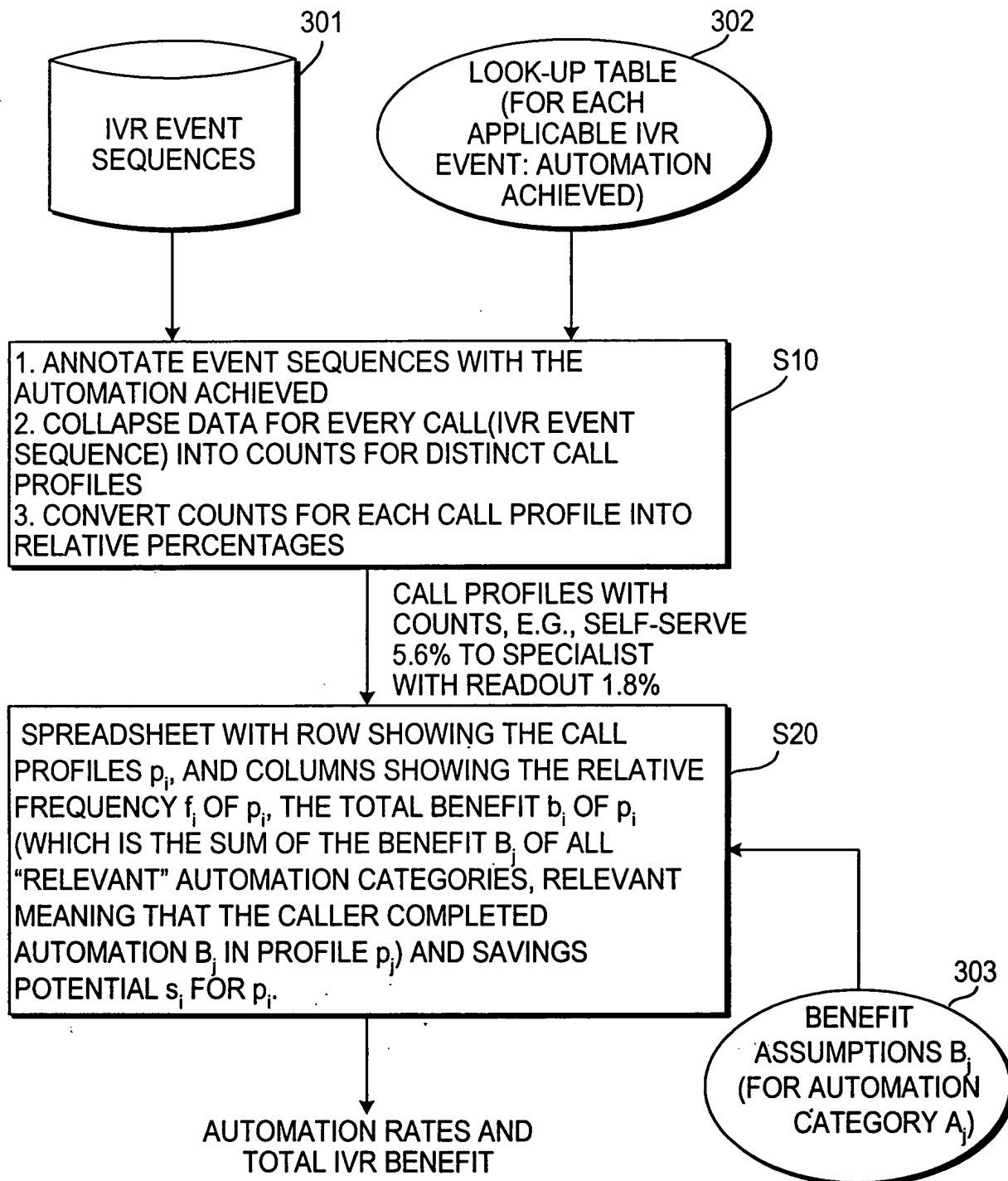


FIG. 7

01-4004D; Katherine Godfrey et al.
 APPARATUS AND METHOD FOR VISUALLY
 PRESENTING EVENTS IN CALLS HANDLED BY AN
 AUTOMATED RESPONSE SYSTEM
 Express Mail No. EL029404355US

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| CALL PROFILE (P_i) | TRAFFIC (f_i) | AUTOMATION (B_{ji}) | | | BENEFIT (AGENT SECS) | | |
|---|-------------------|-------------------------|--------------|--------------|----------------------|-------------|---------|
| | CALLS | % CALLS | ACCOUNT # | ROUTING | INFO DELIVERY | ONE CALL | AVERAGE |
| FULLY-AUTOMATED CALLS | 72 | 2.0% | A | R | I | 105 | 2.1 |
| TRANSFERS TO SPECIALIST AFTER INFORMATION READOUT | 1 | 0.0% | A | R | I | 105 | 0.0 |
| TRANSFERS TO FLOOR AFTER INFO READOUT | 38 | 1.0% | A | | I | 55 | 0.6 |
| TRANSFERS TO SPECIALIST W/ ID | 849 | 23.4% | | R | | 40 | 9.3 |
| TRANSFERS TO FLOOR W/ ID | 1008 | 27.7% | A | | | 15 | 4.2 |
| TRANSFERS TO FLOOR W/O ID | 591 | 16.3% | | | | | |
| MISROUTED TO SPECIALIST W/ ID | 389 | 10.7% | A | -R | | -25 | -2.7 |
| MISROUTED TO SPECIALIST W/O ID | 6 | 0.2% | | -R | | -40 | -0.1 |
| ABANDONS | 681 | 18.7% | | | | | |
| TOTAL | 3636 | 100.0% | 41.5% | 14.5% | 3.1% | 13.4 | |

FIG. 8

01-4004D; Katherine Godfrey et al.
APPARATUS AND METHOD FOR VISUALLY
REPRESENTING EVENTS IN CALLS HANDLED BY AN
AUTOMATED RESPONSE SYSTEM
Express Mail No. EL029404355US

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| AUTOMATION CATEGORY | CALLER IDENTIFICATION ("A") | INFORMATION DELIVERY ("I") | ROUTING ("R") |
|------------------------------|-----------------------------|----------------------------|---------------|
| ASSUMED BENEFIT [AGENT SECs] | 15 | 40 | 40 |

FIG. 9

01-4004D; Katherine Godfrey et al.
 APPARATUS AND METHOD FOR VISUALLY
 REPRESENTING EVENTS IN CALLS HANDLED BY AN
 AUTOMATED RESPONSE SYSTEM
 Express Mail No. EL029404355US

| AUTOMATABLE TRANSACTIONS | #OCCURRENCES | TIME SPENT | FREQUENCY | SAVINGS POTENTIAL | AUTOMATION CATEGORY |
|--|--------------|------------|-----------|-------------------|---------------------|
| ACCOUNT_BALANCE | 88 | 27.31 | 21.5% | 5.9 | - |
| NEW_PAYMENT_ARRANGEMENT | 56 | 20.94 | 13.7% | 2.9 | T |
| CURRENT_PAYMENT_ARRANGEMENT | 9 | 22.08 | 2.2% | 0.5 | - |
| ZIP_CODE | 2 | 9.48 | 0.5% | 0.0 | A |
| PAYMENT_LOCATION | 18 | 21.3 | 4.4% | 0.9 | - |
| BALANCED_PAYMENT_PLAN_AMOUNT | 6 | 21.8 | 1.5% | 0.3 | - |
| RULES_12_AND_22 | 11 | 13.5 | 2.7% | 0.4 | - |
| NEW_APPOINTMENT_DATE_TIME | 84 | 14.51 | 20.5% | 3.0 | A |
| IS_GAS_APPLIANCE | 3 | 24.75 | 0.7% | 0.2 | A |
| IS_NOT_GAS_APPLIANCE | 3 | 9.22 | 0.7% | 0.1 | A |
| NEW_APPOINTMENT_CONFIRMATION_TELEP | 82 | 18.26 | 20.0% | 3.7 | A |
| NEW_APPOINTMENT_LOCATION | 66 | 15.19 | 16.1% | 2.5 | A |
| NEW_APPOINTMENT_DOG | 57 | 11.72 | 13.9% | 1.6 | A |
| NEW_APPOINTMENT_MULTI_OR_SINGLE | | 0 | 0.0% | 0.0 | A |
| NEW_APPOINTMENT_ADULT_PRESENT | 5 | 5.29 | 1.2% | 0.1 | A |
| APPOINTMENT_DETAILS_CONFIRMATION | 13 | 36.14 | 3.2% | 1.1 | T |
| TOTAL NUMBER OF ANNOTATED CALLS | 409 | | | 23.1 | |
| %HANDLED BY AGENT | 72% | | | | |
| WEIGHTED OPPORTUNITY: | 16.6 | | | | |

FIG. 10

01-4004D; Katherine Godfrey et al.
 APPARATUS AND METHOD FOR VISUALLY
 REPRESENTING EVENTS IN CALLS HANDLE [REDACTED] AN
 AUTOMATED RESPONSE SYSTEM
 Express Mail No. EL029404355US

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| CUSTOMER CONTACT TYPE | % CALLS | AUTOMATION CATEGORIES | | |
|---------------------------|---------------|-----------------------|--------------|---------------|
| | | CUSTOMER ID | ROUTING | INFO DELIVERY |
| CUSTOMER SERVICE | 8.7% | X | | |
| BALANCE BILLING | 36.7% | X | X | |
| PAYMENT ARRANGEMENTS | 13.0% | X | X | X |
| PAYMENT OPTIONS | 4.0% | X | X | X |
| TURN ON | 3.0% | | | |
| RATES | 1.3% | X | X | X |
| STOP SERVICE | 3.5% | X | | |
| SERVICE | 11.5% | X | X | |
| APPOINTMENT | 16.5% | X | X | X |
| EMERGENCY | 1.8% | X | | |
| TOTAL/UPPER BOUNDS | 100.0% | 95.7% | 71.5% | 29.5% |

HOW TO TRANSFORM UPPER BOUNDS ON AUTOMATION TO AGENT TIME SAVING OPPORTUNITIES:

| | | | | |
|--|--------------|-------|------|------|
| BENEFIT ASSUMPTION [AGENT SECS PER CALL] | 15 | 5 | 40 | 40 |
| BENEFIT [AGENT SECS] | (14.355) | 3.575 | 28.6 | 11.8 |
| TOTAL OPPORTUNITY | 58.33 | | | |

$$95.7\% \times 15 = 14.355$$

FIG. 11

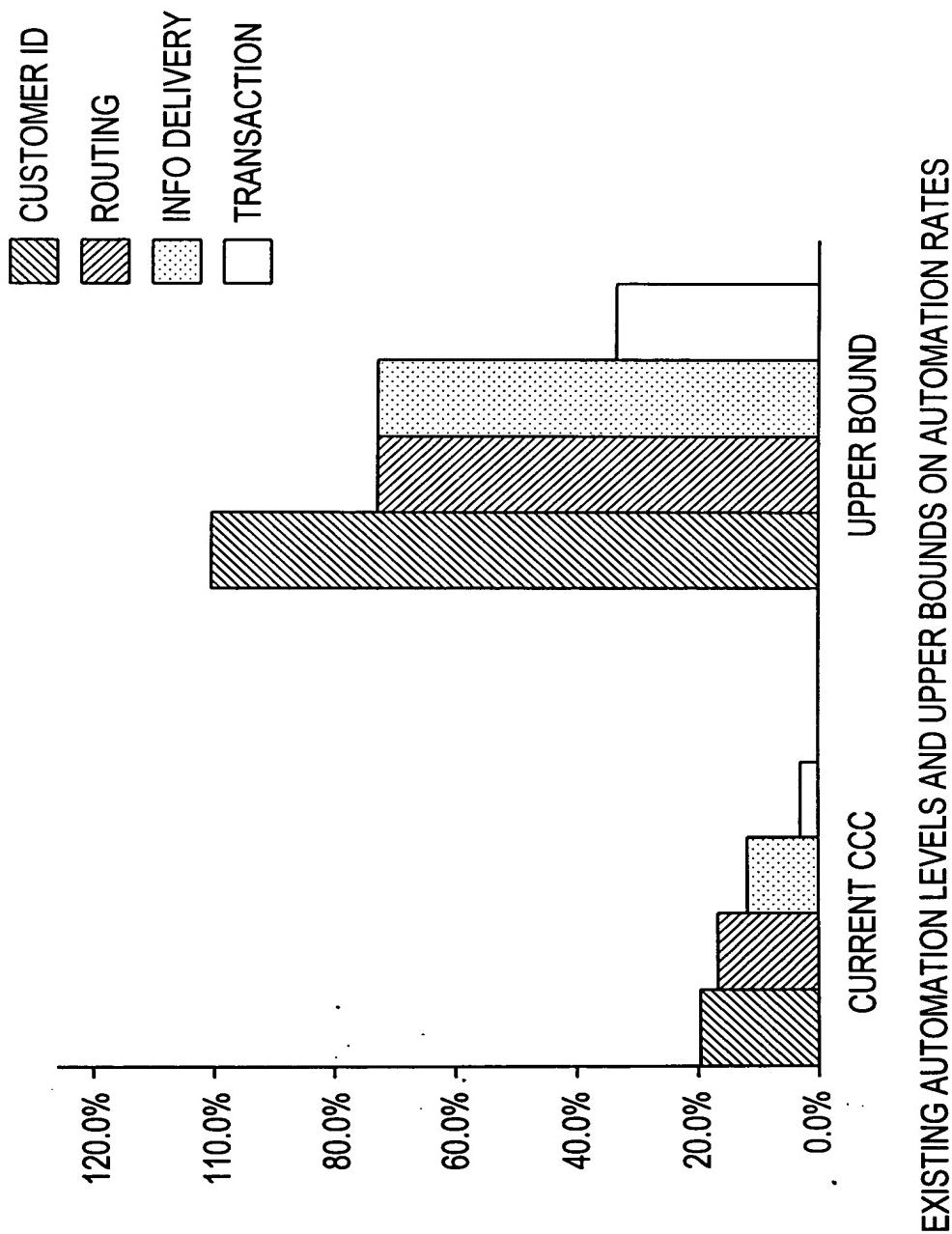


FIG. 12

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AGENT LABOR SAVINGS POTENTIAL

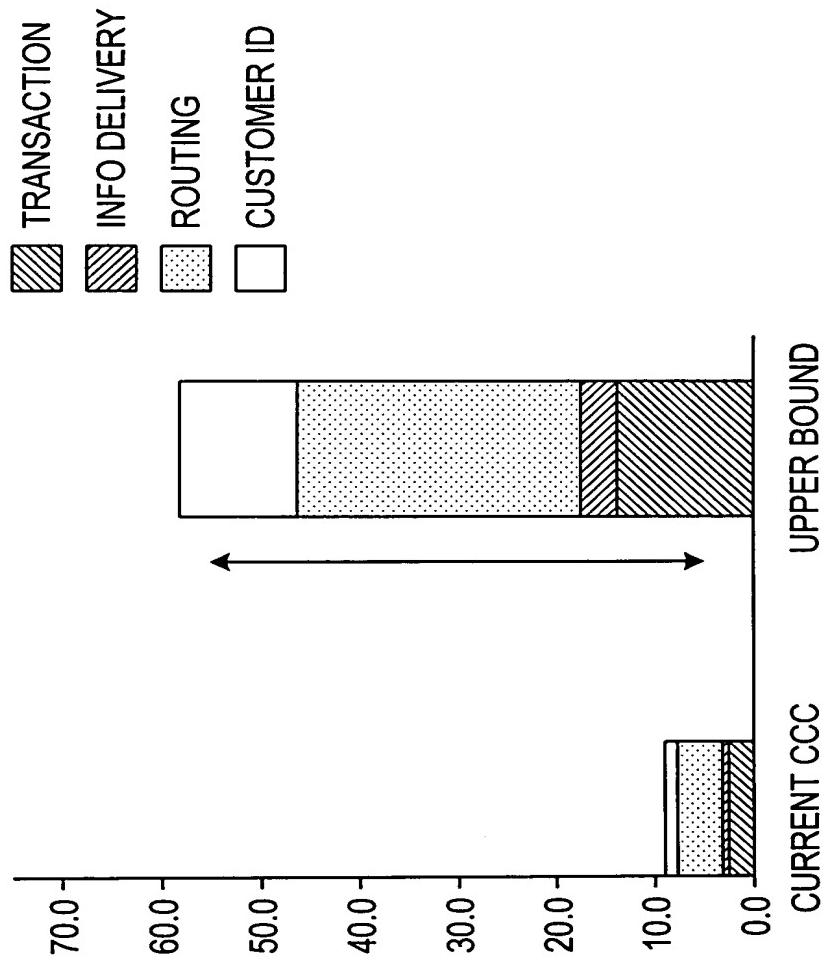
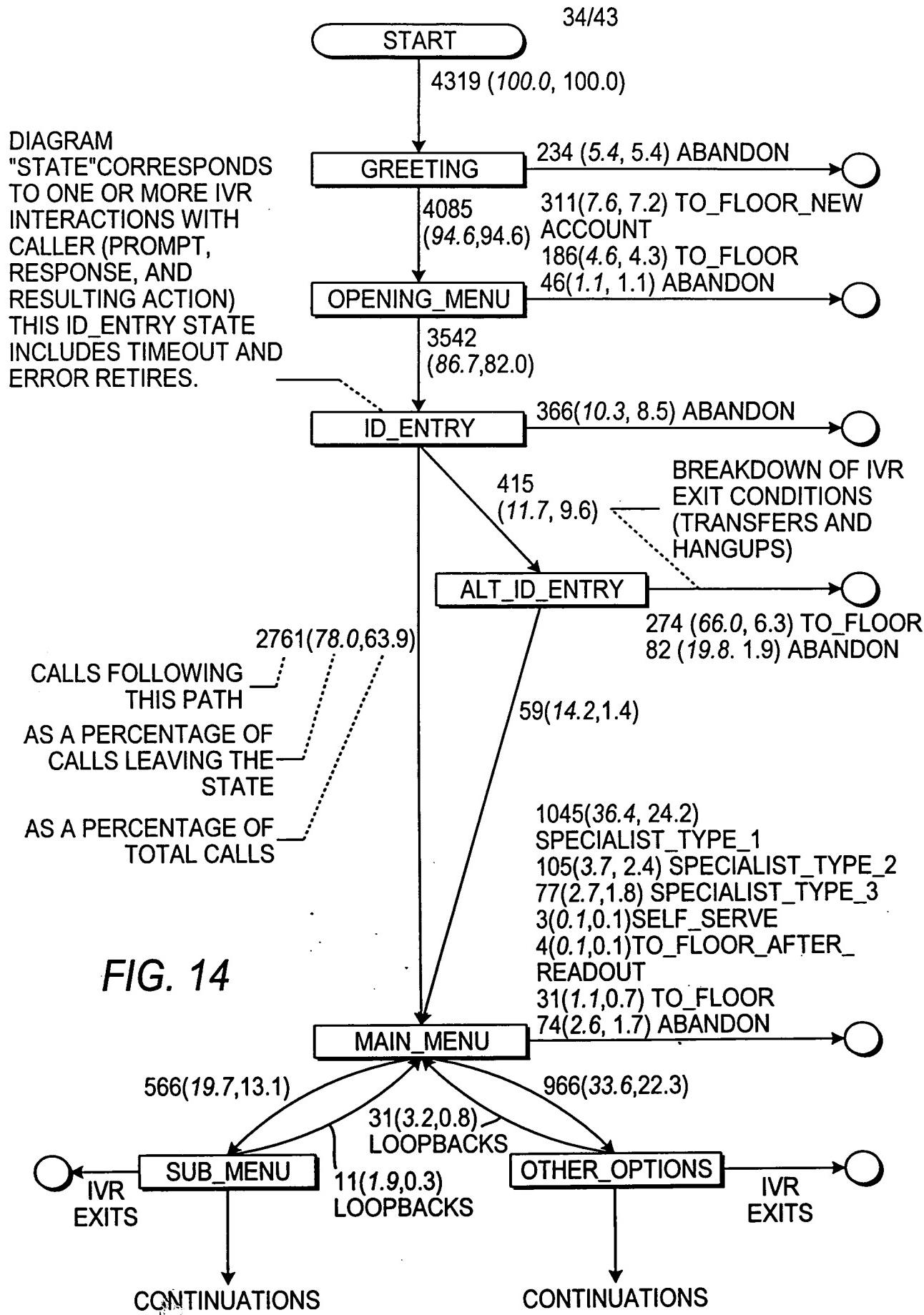


FIG. 13



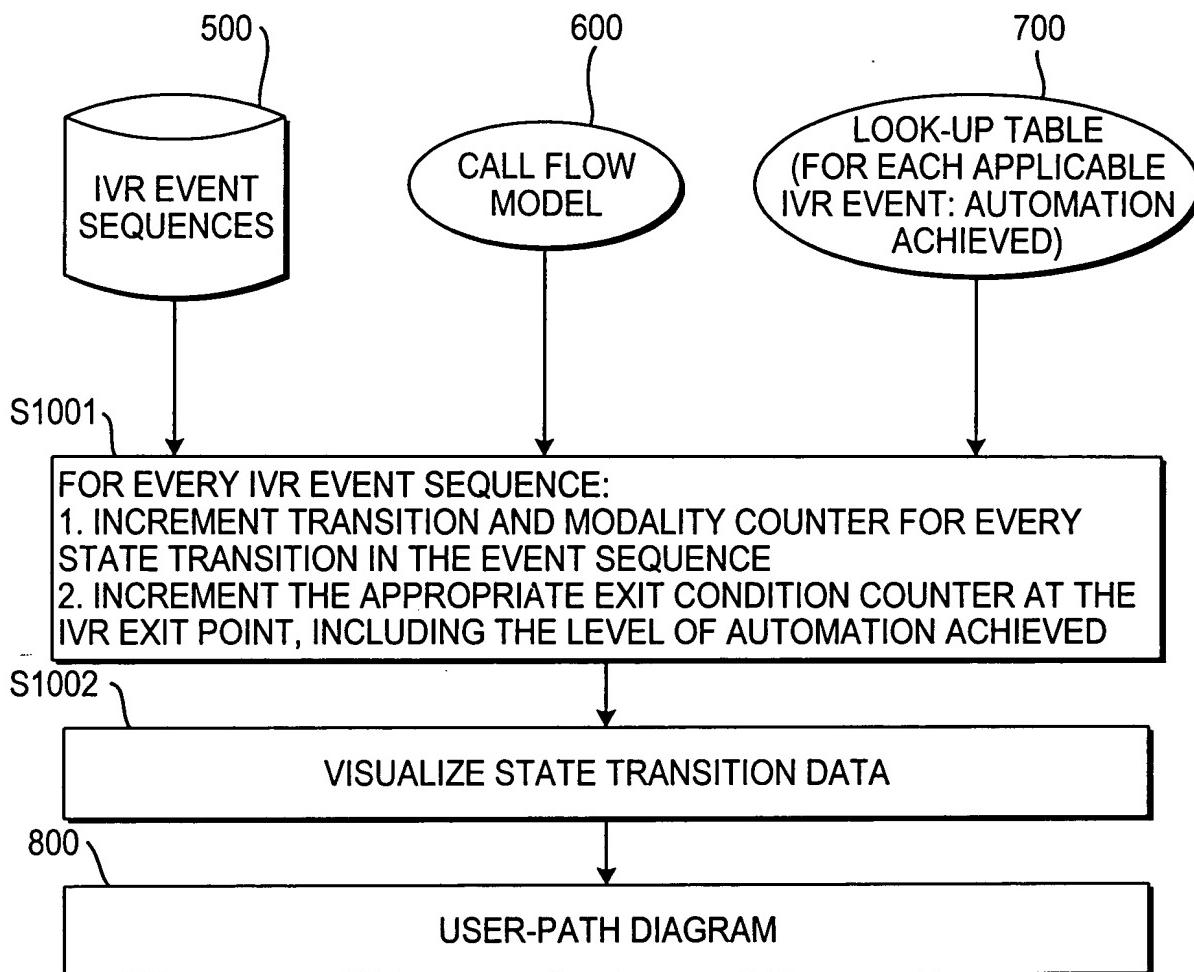


FIG. 15

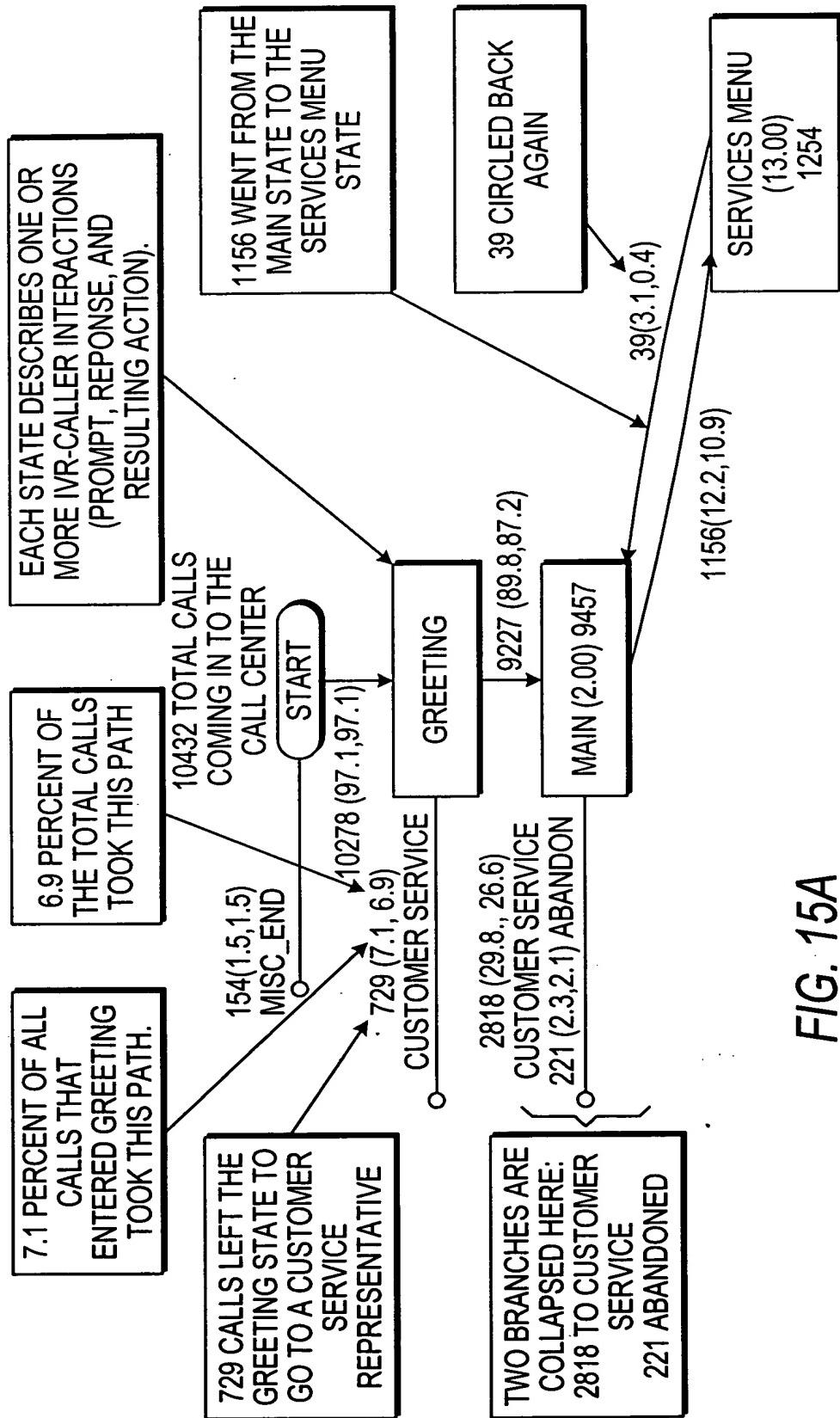
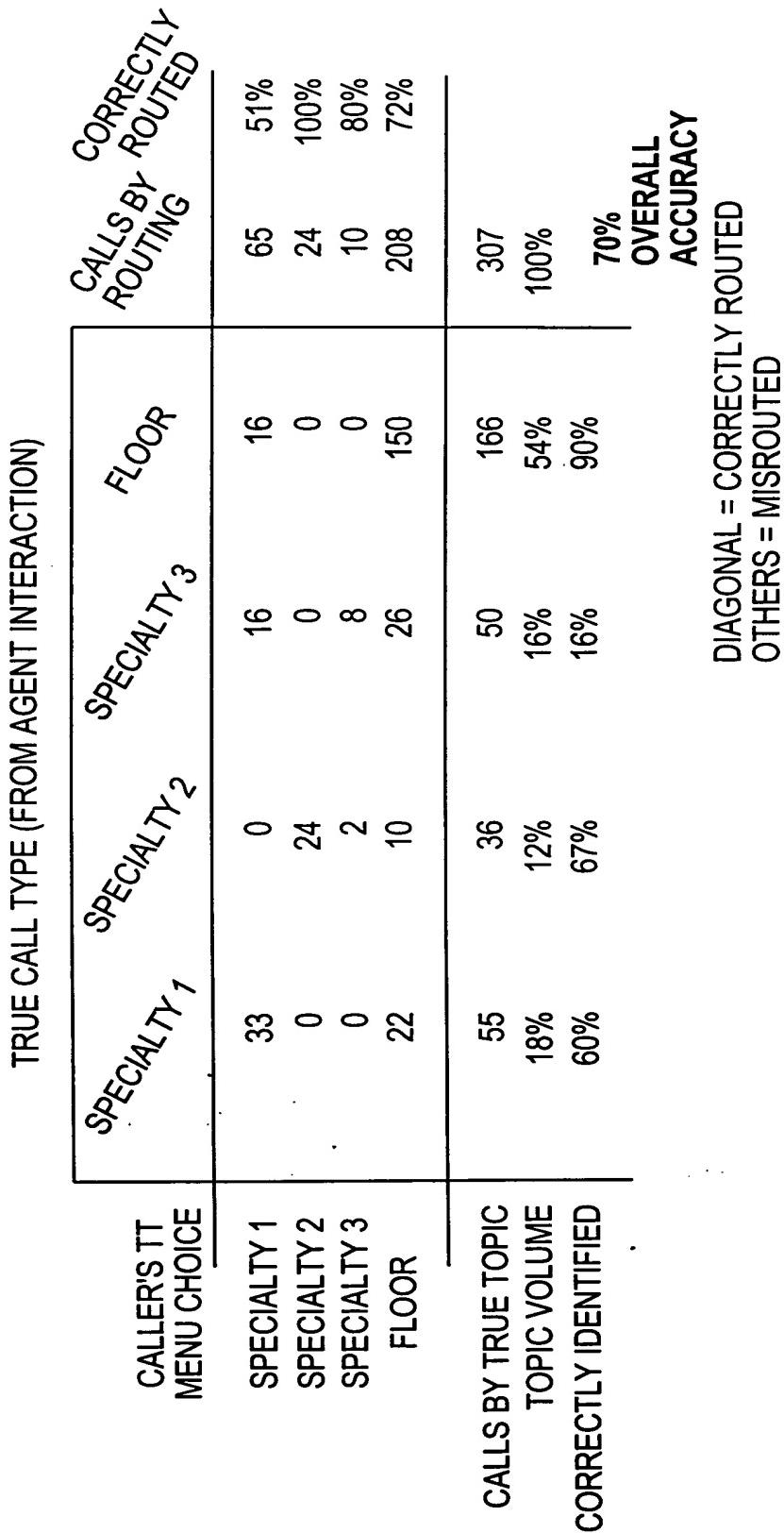


FIG. 15A



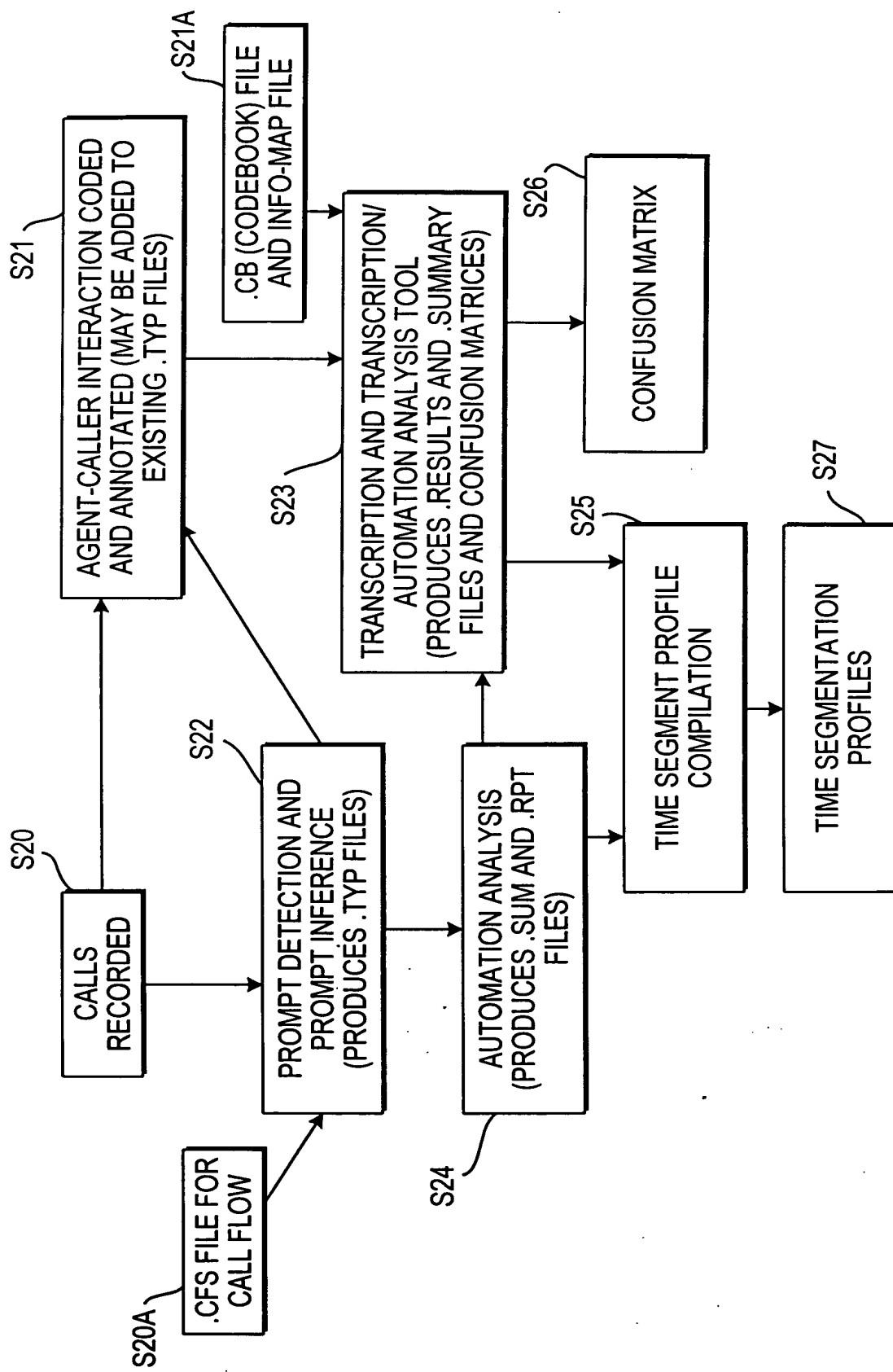


FIG. 16A

01-4004D; Katherine Godfrey et al.
 APPARATUS AND METHOD FOR VISUALLY
 PRESENTING EVENTS IN CALLS HANDLED BY AN
 AUTOMATED RESPONSE SYSTEM
 Express Mail No. EL029404355US

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| A | B | C | D | E | F | G | H |
|----------------|------------|--------------------------|---|------------------|-------------|-------------|-------------|
| 1 FILENAME | IVR EXIT | IVR ROUTING | IVR_INFORMATION | IVR_ROUTING_DEST | FIRST_AGENT | FIRST_AGENT | FIRST_TOPIC |
| 2 /D4M/TRANS/ | INCOMPLETE | P-AGT_STARTHOMESERVICE | RULES_12_AND_22_READOUT | TURNON | | | STRT |
| 3 /D4M/TRANS/ | INCOMPLETE | P-AGT_CSRFROMNEWPAY | CALLING_FROM_SERVICE_LOCATION,CONFIRM_ADDR PAYMENTX | | | | PAY-CHG |
| 4 /D4M/TRANS/ | INCOMPLETE | P-AGT_NEWPAYOUTARRAN | CALLING_FROM_SERVICE_LOCATION,TELEPHONE,CO PAYMENTX | | | | PAY-MAK |
| 5 /D4M/TRANS/ | INCOMPLETE | P-AGT_XFERFROMTELEPHON | CALLING_FROM_SERVICE_LOCATION,CONFIRM | BALANCEBILLING | | | PAY-MAK |
| 6 /D4M/TRANS/ | INCOMPLETE | P-AGT_CSRFROMBILLING | | BALANCEBILLING | | | ECI |
| 7 /D4M/TRANS/ | INCOMPLETE | P-AGT_CSRFROMBILLING | | BALANCEBILLING | | | RSTR |
| 8 /D4M/TRANS/ | INCOMPLETE | P-AGT_DUPSTATFAILURE | CALLING_FROM_SERVICE_LOCATION,TELEPHONE | BALANCEBILLING | | | OTH |
| 9 /D4M/TRANS/ | INCOMPLETE | P-AGT_CSRFROMMAIN | | CUSTOMERSERVICE | | | PAY-MAK |
| 10 /D4M/TRANS/ | INCOMPLETE | P-AGT_CSRFROMMAIN | | CUSTOMERSERVICE | | | PAY-REV |
| 11 /D4M/TRANS/ | INCOMPLETE | P-AGT_XFERFROMCONFIRMA | CALLING_FROM_SERVICE_LOCATION,CONFIRM_ADDR PAYMENTX | | | | PAY-MAK |
| 12 /D4M/TRANS/ | INCOMPLETE | P-AGENT_START_COMM | RULES_12_AND_22_READOUT | TURNON | | | CHNG |
| 13 /D4M/TRANS/ | INCOMPLETE | P-AGT_NEWPAYOUTARRAN | CALLING_FROM_SERVICE_LOCATION,CONFIRM_ADDR PAYMENTX | | | | PAY-MAK |
| 14 /D4M/TRANS/ | INCOMPLETE | P-AGT_STARTCLEANANDSHO | RULES_12_AND_22_READOUT | TURNON | | | CHNG |
| 15 /D4M/TRANS/ | INCOMPLETE | P-AGT_CSRFROMBILLING | | BALANCEBILLING | | | PAY-MAK |
| 16 /D4M/TRANS/ | INCOMPLETE | P-AGT_CSRFROMNEWPAY | CALLING_FROM_SERVICE_LOCATION,CONFIRM_ADDR PAYMENTX | | | | PAY-MAK |
| 17 /D4M/TRANS/ | INCOMPLETE | P-AGT_CSRFROMMAIN | | CUSTOMERSERVICE | | | PAY-MAK |
| 18 /D4M/TRANS/ | INCOMPLETE | P-AGT_CSRFROMDUPLICATE | CALLING_FROM_SERVICE_LOCATION,TELEPHONE,CO BALANCEBILLING | | | | ECI |
| 19 /D4M/TRANS/ | INCOMPLETE | P-AGT_STARTGASHOME | RULES_12_AND_22_READOUT | TURNON | | | STRT |
| 20 /D4M/TRANS/ | INCOMPLETE | P-AGT_XFERFROMTELEPHON | CALLING_FROM_SERVICE_LOCATION,TELEPHONE | PAYMENTX | | | BAL |
| 21 /D4M/TRANS/ | INCOMPLETE | P-AGT_NEWPAYOUTARRAN | CALLING_FROM_SERVICE_LOCATION,CONFIRM_ADDR PAYMENTX | | | | PAY-MAK |
| 22 /D4M/TRANS/ | INCOMPLETE | P-AGT_XFERFROMTELEPHON | CALLING_FROM_SERVICE_LOCATION,TELEPHONE | BALANCEBILLING | | | PAY-MAK |
| 23 /D4M/TRANS/ | INCOMPLETE | P-AGT_XFERFROMCONFIRMA | CALLING_FROM_SERVICE_LOCATION,TELEPHONE,CO PAYMENTX | | | | PAY |
| 24 /D4M/TRANS/ | INCOMPLETE | P-AGT_CSRFROMMAIN | | CUSTOMERSERVICE | | | OTH |
| 25 /D4M/TRANS/ | INCOMPLETE | P-AGT_CSRFROMMAIN | | CUSTOMERSERVICE | | | PAY-MAK |
| 26 /D4M/TRANS/ | INCOMPLETE | P-AGENT-ID-MAKE-APPOINTM | | APPOINTMENT | | | RSTR |
| 27 /D4M/TRANS/ | INCOMPLETE | P-AGT_CSRFROMMAIN | | CUSTOMERSERVICE | | | RSTR |
| 28 /D4M/TRANS/ | INCOMPLETE | P-AGT_STARTHOMESERVICE | RULES_12_AND_22_READOUT | TURNON | | | STRT |
| 29 /D4M/TRANS/ | INCOMPLETE | P-AGT_CSRFROMMAIN | | CUSTOMERSERVICE | | | PAY-MAK |
| 30 /D4M/TRANS/ | INCOMPLETE | P-AGEND-MAIL_ELEC_R | RULES_12_AND_22_READOUT | RATES | | | STRT |
| 31 /D4M/TRANS/ | INCOMPLETE | P-AGT_CSRFROMMAIN | | CUSTOMERSERVICE | | | PAY-MAK |
| 32 /D4M/TRANS/ | INCOMPLETE | P-AGT_REFUSEDNEWPAY_M | CALLING_FROM_SERVICE_LOCATION,CONFIRM_ADDR PAYMENTX | | | | PAY-MAK |
| 33 /D4M/TRANS/ | INCOMPLETE | P-AGT_INCORRECTNOURRE | CALLING_FROM_SERVICE_LOCATION,CONFIRM_ADDR PAYMENTX | | | | PAY-REV |
| 34 /D4M/TRANS/ | INCOMPLETE | P-AGT_XFERFROMTELEPHON | CALLING_FROM_SERVICE_LOCATION,TELEPHONE | PAYMENTX | | | PAY-MAK |
| 35 /D4M/TRANS/ | INCOMPLETE | P-AGT_CSRFROMBILLING | | BALANCEBILLING | | | BIL |
| 36 /D4M/TRANS/ | INCOMPLETE | P-AGT_CSRFROMMAIN | | CUSTOMERSERVICE | | | PAY-MAK |

FIG. 17

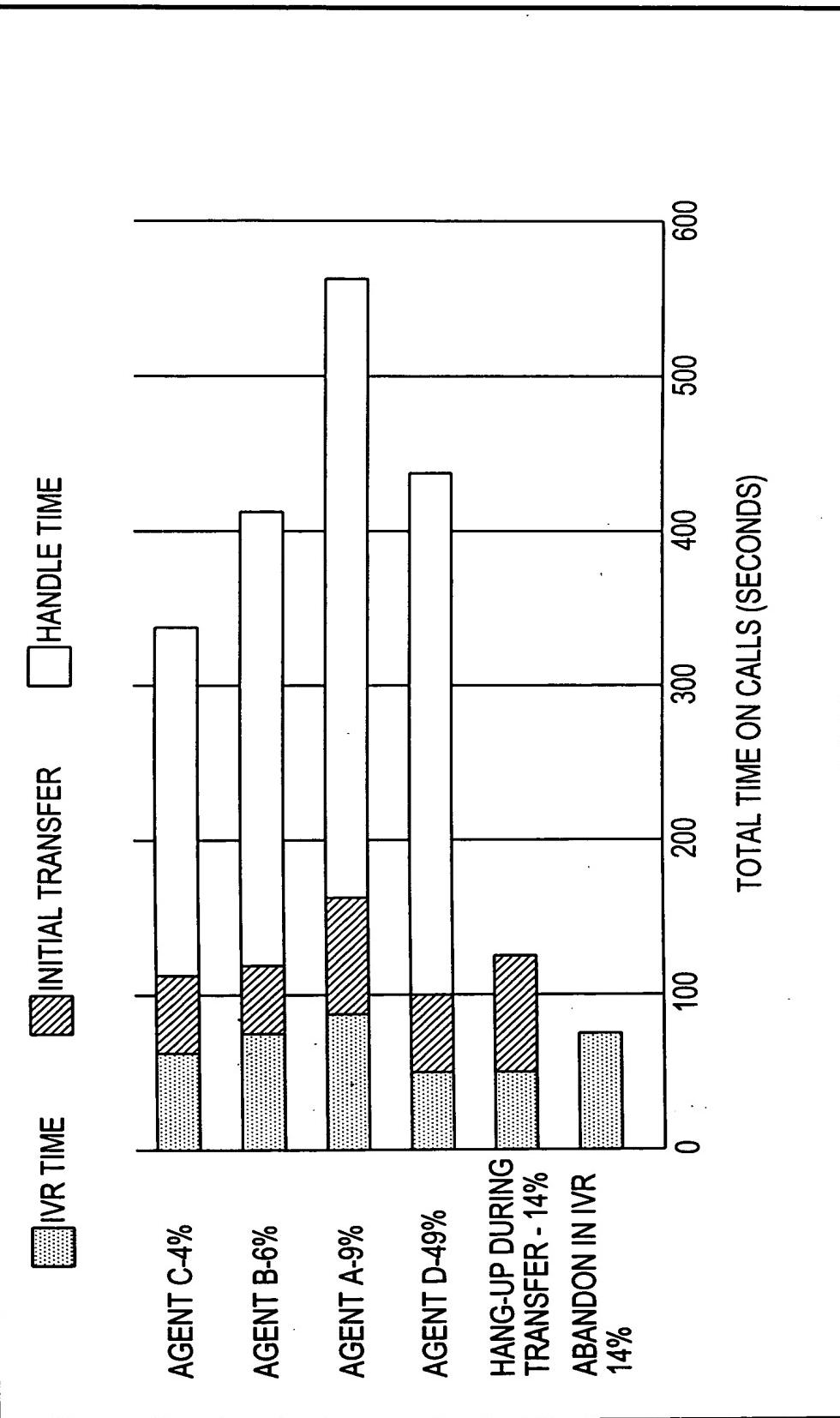


FIG. 18

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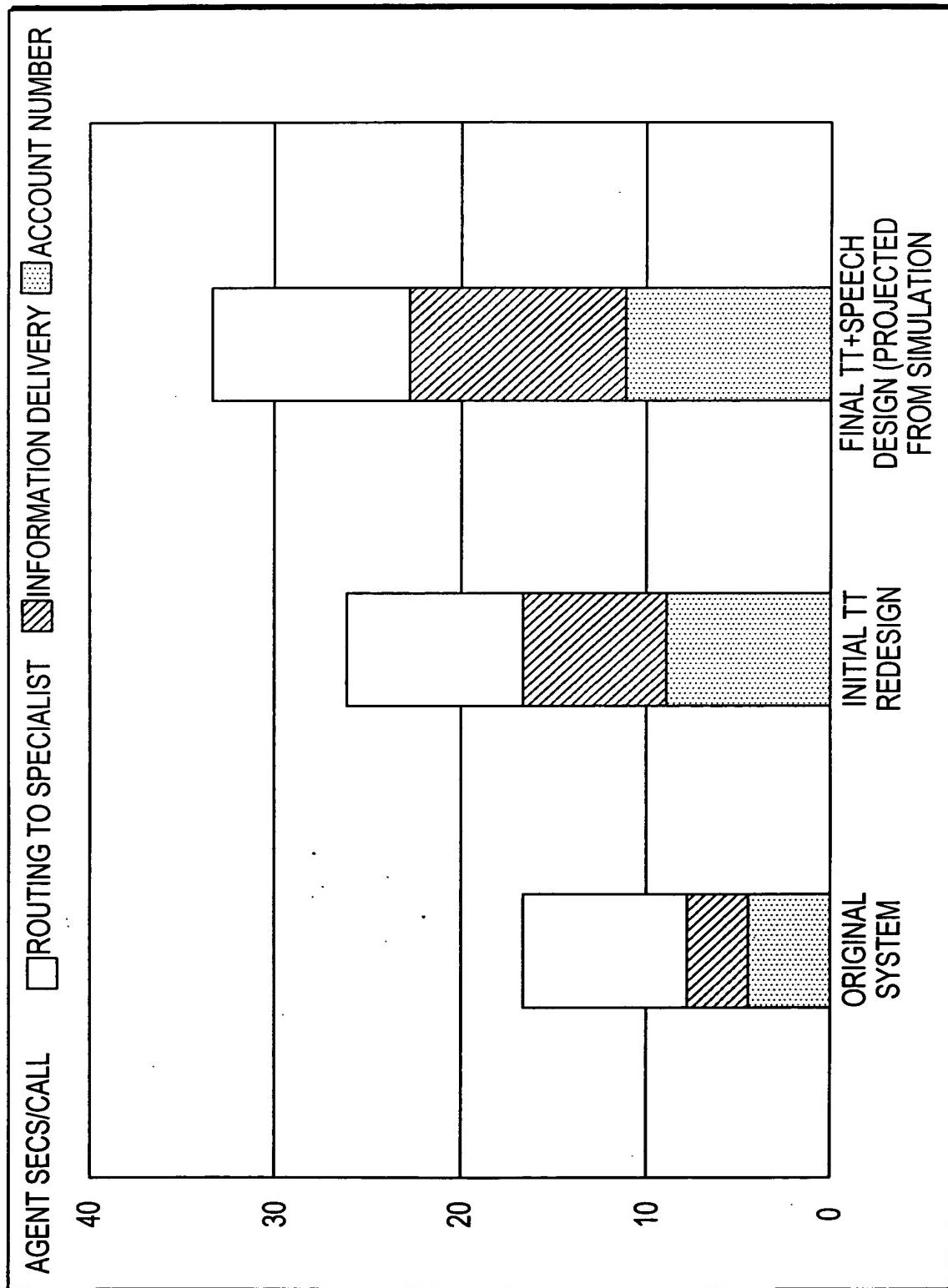


FIG. 19

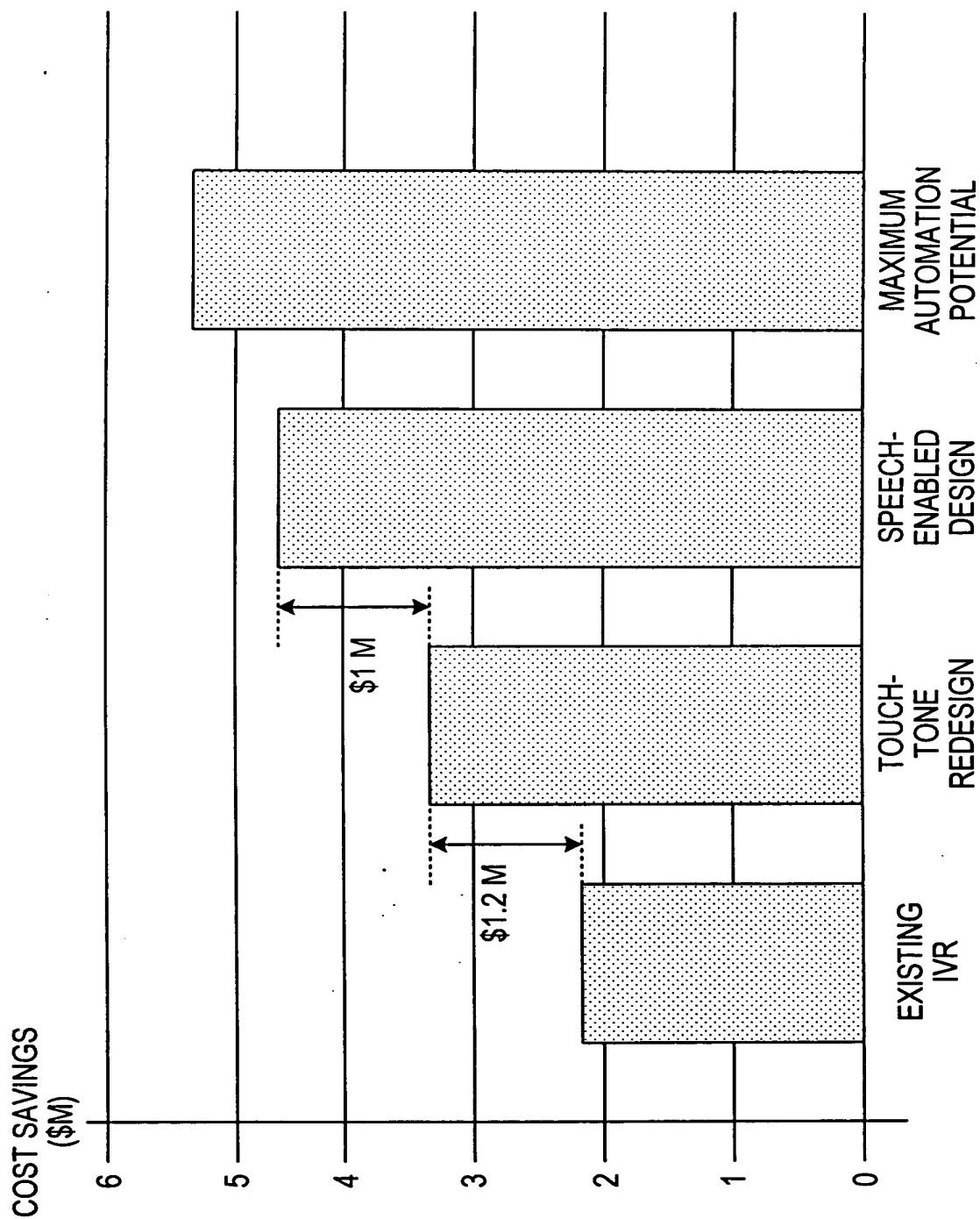


FIG. 19A

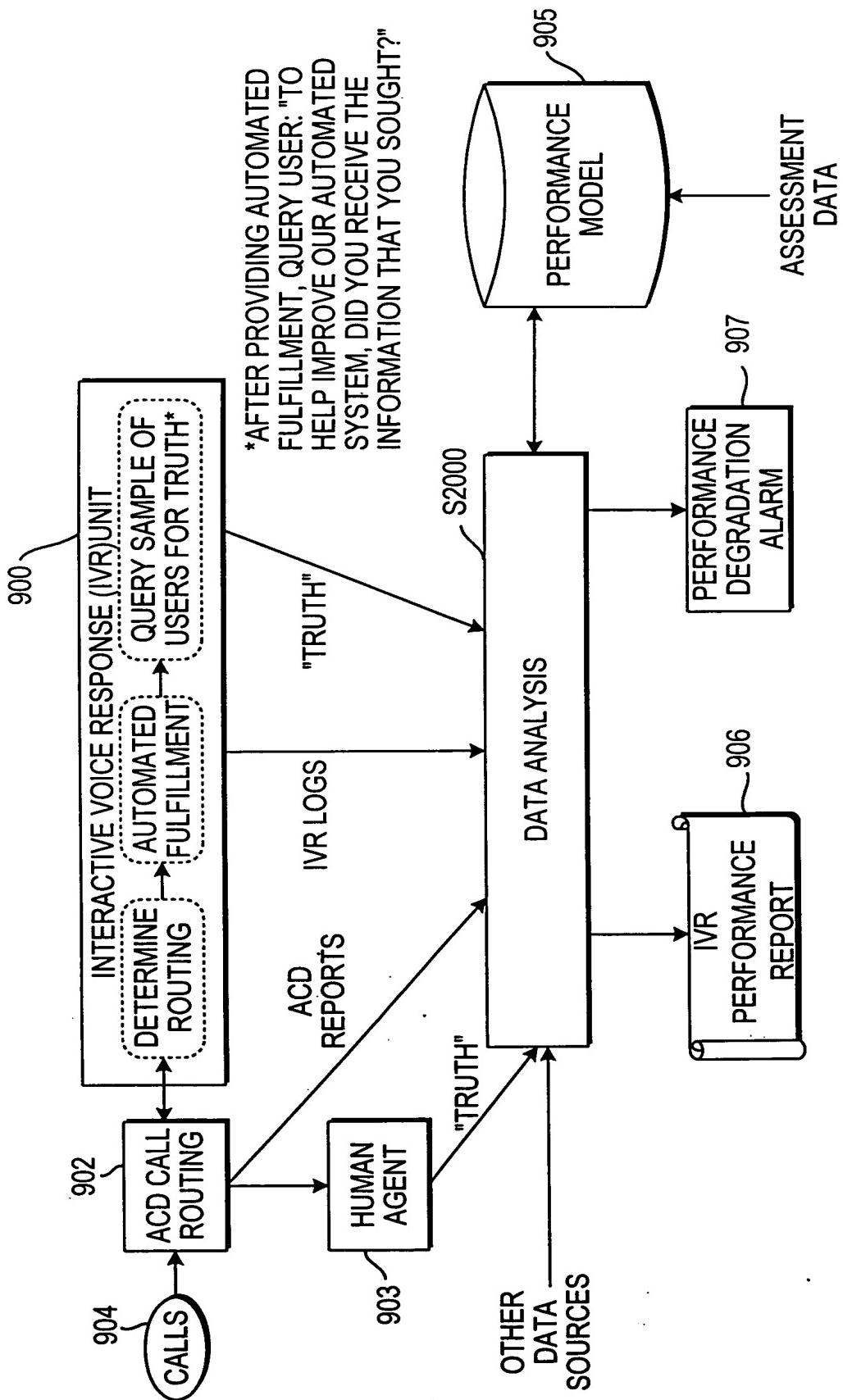


FIG. 20